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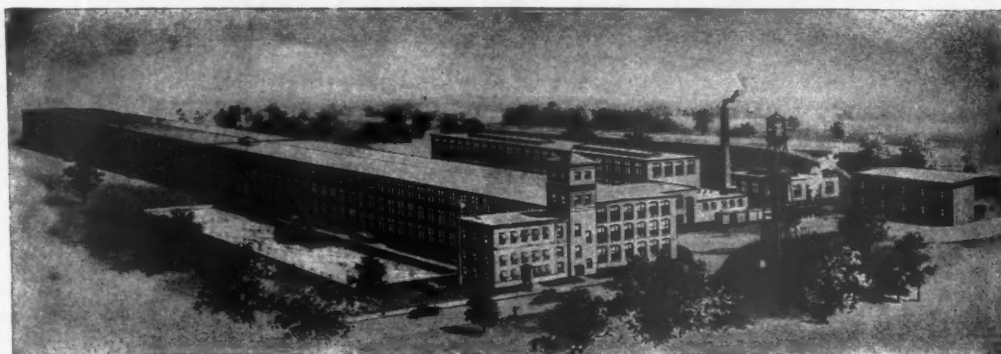
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PACIFIC COAST PULP PRODUCTION REACHED NEW HIGH IN 1934

Pacific Coast Sulphite Tonnage Led All Other Regions—
Review of 1934 Highlights of Pacific
Coast Industry

WITH a production of 514,737 short tons the Pacific Coast in 1934 led all other regions in the manufacture of sulphite pulp. All of this total was produced in Oregon and Washington. Bleached sulphite in the amount of 285,934 short tons gave the Pacific Coast the lead over all other sections in this grade.

Unbleached sulphite totalling 228,803 short tons was also ahead of the production in other regions.

Pacific Coast sulphite pulp production was second to that of the South and groundwood production was second to that manufactured in the Lake States.

The Pacific Coast region was second to the South in the production of all grades of pulp, the South leading the Coast by 65,743 short tons. Of the South's total production of 985,276 short tons of all grades sulphate pulp accounted for 910,208 short tons, or 92% of the total.

Largest Coast Production

The Pacific Coast production in 1934 of all grades of wood pulp was the largest in the history of the region. In twelve years, from 1923 when wood pulp production totalled 299,596 short tons in Oregon, Washington and California production expanded to 935,033 short tons (including soda pulp) in 1934, an increase of 635,437 short tons. Following is the U. S. Pacific Coast

wood pulp production by years from 1923 to and including 1934:

U. S. Pacific Coast Wood Pulp Production, 1923-1934	
	Tons of 2,000 lbs.
1923.....	299,596
1924.....	309,433
1925.....	322,594
1926.....	378,005
1927.....	449,218
1928.....	562,514
1929.....	780,494
1930.....	815,089
1931.....	817,548
1932.....	607,662
1933.....	773,102
1934.....	935,033

British Columbia Pulp Production Increases

Pulp production in British Columbia in 1934 was 355,165 short tons, an increase of 31,734 tons over 1933 production of 323,431 tons.

This was the largest yearly pulp production in the history of the province, being 138,089 tons greater than the production of 217,076 tons in 1923.

Following is the British Columbia wood pulp production by years from 1923 to and including 1934:

British Columbia Wood Pulp Production, 1923-1934	
	Tons of 2,000 lbs.
1923.....	217,076
1924.....	216,243
1925.....	230,733
1926.....	259,504
1927.....	296,253
1928.....	310,961
1929.....	304,619
1930.....	335,429
1931.....	310,029

1932.....	259,586
1933.....	323,431
1934.....	355,165

1934 In Review

Despite the air of uncertainty created in business throughout the country during 1934 by strikes and governmental policies, the pulp and paper industry on the Pacific Coast achieved definite progress toward more normal conditions.

While operations were curtailed in some mills by the longshoremen's strike which started in May and lasted in some sections of the Pacific Coast for nearly three months, the total output of pulp and of paper was larger than in 1933.

Earnings by Pacific Coast mills were showing steady improvement although generally being far from the point of producing satisfactory dividends to those who have risked their money with the pulp and paper industry. Several companies made much progress toward paying up back dividends. Others caught up with dividend requirements and resumed paying quarterly and semi-annual dividends but on a very much smaller scale than in 1929 and 1930.

The Markets

The sulphite pulp market remained steady throughout the year 1934 (see price table in Statistical Section) and up until March 19th, 1935, when foreign producers of

UNITED STATES WOODPULP PRODUCTION BY REGIONS—1934*

Source—United States Pulp Producers Association
(Tons of 2000 pounds)

Region.	Total All Grades*	Total Sulphite	Bleached Sulphite	Unbleached Sulphite	Total Sulphate	Groundwood
West Coast	919,533	514,737	285,934	228,803	165,747	239,049
New England	841,401	316,415	172,217	144,198	243	524,743
New York and Pennsylvania	384,869	166,924	86,280	80,644	0	217,945
Lake States	769,803	351,587	209,970	141,617	164,769	253,447
South	985,276	56,854	52,211	4,643	910,208	18,214
Totals	3,900,882	1,406,517	806,612	599,905	1,240,967	1,253,398

*Except Soda Pulp. About 15,000 tons of Soda Pulp was produced on the Pacific Coast in 1934. (Editor.)

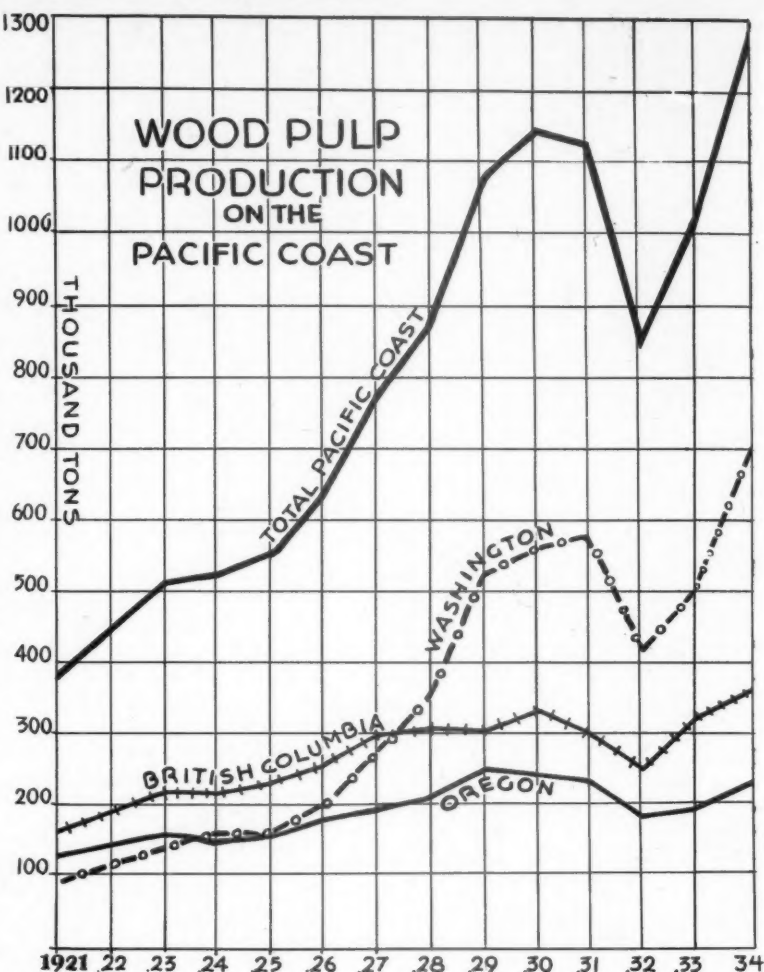
sulphite pulp cut the price of bleached sulphite \$5 per ton and of unbleached \$4 per ton.

Although the market for sulphite maintained a steady tone on the surface there was an undercurrent toward the latter part of 1934 of price cutting by foreign producers anxious to dispose of unsold tonnage before the year ended.

The kraft pulp market fluctuated within a range of \$5 per ton from January to December, 1934. In January the price ex dock Atlantic ports was \$37 and \$38 per ton. As the year ended the price had dropped to \$33 per ton. Early in 1935 the price recovered to a \$34 basis and remained at that point until May when some brands of prime quality Swedish kraft rose to \$36, although some was still priced at \$34. Foreign No. 2 kraft pulp, as of the latter part of May, 1935, ranged from \$32 to \$34 per ton. Domestic No. 1 kraft pulp was priced at from \$33 to \$36 per ton.

Pulp, particularly kraft pulp, was imported by Pacific Coast paper mills in increasing quantities. Insufficient kraft pulp production on the Pacific Coast brought about this condition.

The paper market, with the exception of newsprint, felt the stabilizing effect of the pulp market and of the Paper Distributing Code. The code in several instances showed it had teeth in it thereby hindering those who normally existed chiefly through price cutting. The majority of those engaged in the distribution of paper appear to favor the retention of the distributing code saying that it had not only through its open price filing system, prevented a chaotic paper market, but it had taught a great many paper merchants the value of cooperation with their competitors.



The newsprint industry attempted to improve its serious condition by advancing the price of newsprint the latter part of 1934 for 1935 delivery \$2.50 per ton with the statement that the price would advance another \$2.50 per ton July 1st, 1935.

The price of \$42.50 per ton for the first six months of 1935 could

not be made to stick, due to contracts made at the old \$40 rate by the St. Lawrence Paper Company with the Hearst and other papers in the United States. Before the first quarter of 1935 was over practically all North American newsprint mills were selling at the old price of \$40 per ton. Through the unfortunate

PACIFIC COAST WOODPULP PRODUCTION—1923-1934

Pacific Coast States and British Columbia
(Tons of 2,000 lbs.)

	1923 Tons	1924 Tons	1925 Tons	1926 Tons	1927 Tons	1928 Tons
Washington	136,943	159,539	161,858	199,164	268,349	349,107
Oregon and California	162,633	149,894	160,736	178,841	200,869	213,407
British Columbia	217,076	216,243	230,733	259,504	296,253	310,961
Total Pacific Coast	516,672	525,676	553,327	637,509	775,471	873,475

	1929 Tons	1930 Tons	1931 Tons	1932 Tons	1933 Tons	1934 [†] Tons
Washington	523,948	566,137	580,016	420,529	583,770	709,748
Oregon and California	256,546	248,952	237,532	187,133	189,332	225,285
British Columbia	304,619	335,429	310,029	259,586	323,431	355,165
Total Pacific Coast	1,085,113	1,150,518	1,127,577	867,248	1,096,533	1,290,198

Source—U. S. figures up to and including 1933, from U. S. Dept. of Commerce, Bureau of Census; B. C. figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

[†] Figures based upon United States Pulp Producers Association total for Oregon and Washington, excepting soda pulp. Addition of soda pulp production and division of products between Oregon and Washington estimated by Pacific Pulp & Paper Industry. No wood pulp production in California.

wording of all newsprint contracts the lowest price in the industry automatically sets the base for the entire market.

Premier Taschereau of the Province of Quebec took the initiative upon the failure of the attempted newsprint price increase and laid before the Quebec legislature a proposal which would enable the provincial government to force the newsprint mills to increase the price of newsprint through the raising of the cost of pulpwood stumpage on crown lands. This bill was passed during May, 1933, and is reported in detail elsewhere in this issue.

However, Premier Taschereau up to the time of going to press, had not obtained the active support of Premier Hepburn of Ontario and there appears little likelihood of Ontario passing a similar law. Unless Ontario follows Quebec's example the consensus of opinion appears to be that Quebec can do nothing about enforcing its law. To enforce it would simply throw the production

of newsprint in Quebec into the hands of Ontario mills.

During May premier Hepburn of Ontario offered newsprint mills a further concession in pulpwood stumpage rates if they would engage in unusually heavy cutting operations this year to provide immediate employment for Ontario woodsmen. This action was interpreted as notice that Ontario would not cooperate with Quebec in attempting to force the price of newsprint up.

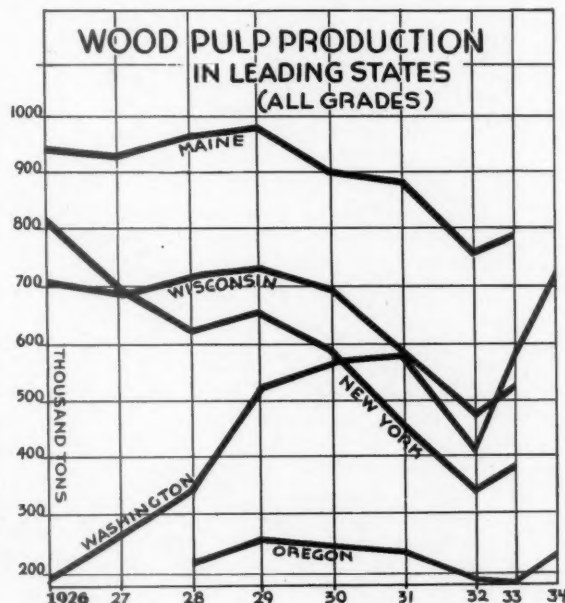
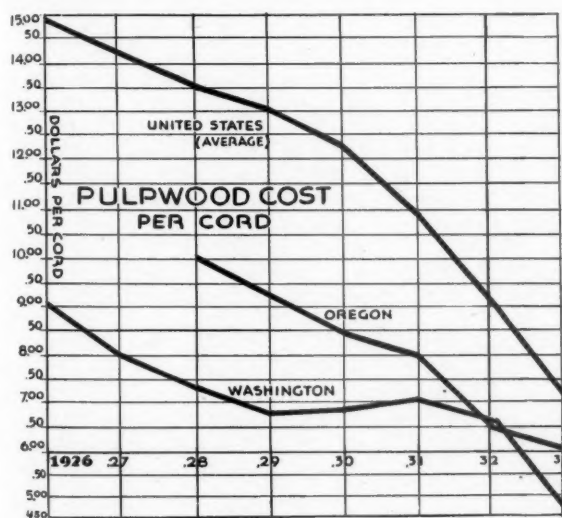
American publishers began seeking other sources of newsprint. The Hearst newspapers sent a representative to Sweden and Finland and it is reported, although not verified, that he concluded contracts for foreign newsprint for 1936. Talk was also rife among publishers about forestalling an increase in Canadian newsprint prices by immediate development of news mills in the

South. At the time this is written no tangible plans have come to light, the publishers being wary of engaging in the financing of a newsprint mill in the South.

On the Pacific Coast Swedish and Finnish newsprint continued to be used by a number of newspapers during 1934. At the beginning of 1935 several papers whose purchases for a number of years had been from the International Paper Company's mill at Cornerbrook, Newfoundland, switched to British Columbia newsprint.

Mill Improvements

The year 1934 was marked by the steady improvement in production facilities by almost every operating pulp and paper mill on the Pacific Coast. To increase the quality of their grades the mills added a large amount of equipment and rearranged their present equipment



TOTAL UNITED STATES PRODUCTION OF WOODPULP

By Grades—1925-1934*

(Tons of 2000 pounds)

Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	3,962,217	790,510	612,576	409,768	1,612,019	472,647	64,697
1926	4,394,766	911,729	646,466	519,960	1,764,248	496,920	55,463
1927	4,313,403	872,411	680,288	603,253	1,610,409	487,478	59,564
1928	4,510,800	836,751	722,107	774,225	1,610,988	488,641	78,088
1929	4,862,885	848,754	839,953	910,888	1,637,653	520,729	104,908
1930	4,630,308	815,897	751,166	949,513	1,560,221	474,230	79,281
1931	4,409,344	675,859	740,812	1,034,291	1,449,240	374,054	135,088
1932	3,760,267	548,702	596,937	1,028,846	1,203,044	290,703	92,035
1933	4,329,248	543,957	742,662	1,263,222	1,197,553	581,854	
1934	4,281,428	599,905	806,612	1,240,967	1,253,398	294,089	86,457

*Source: 1925-1933 U. S. Bureau of the Census. 1934 United States Pulp Producers Association.

PACIFIC PULP & PAPER INDUSTRY

SUMMARY FOR 1934 OF UNITED STATES WOOD PULP PRODUCTION, SHIPMENTS and STOCKS*

As Reported to the Pulp Executive Authority by 172 Mills in the United States¹

Tons of 2,000 lbs, air dry weight

	Production	Used	Shipments		Stocks on Hand	
			Domestic Market	Export	End of Period Own Use	Market
Total All Grades (Except Soda) 1934 ¹	3,779,860	3,256,206	373,133	117,921	68,118	41,862
Total ² Sulphite	1,384,471	899,428	344,178	114,161	19,497	40,946
Total ³ Bleached Sulphite	806,612	464,984	266,852	55,862	4,898	35,456
Total ⁴ Unbleached Sulphite	577,859	434,444	77,326	58,299	14,599	5,490
Total ⁵ Bleached Sulphate	88,141	86,732	1,422	0	938	0
Total ⁶ Unbleached Sulphate	1,081,511	1,077,416	2,899	0	5,707	292
Total ⁷ Groundwood	1,145,079	1,116,661	21,708	0	41,402	293
Total ⁸ Damaged, Off-Quality and Miscellaneous Grades	80,658	75,969	2,926	3,760	574	331

*Source—United States Pulp Producers Association.

¹ 172 mills whose capacity totals 94% of capacity of the United States.² As reported by 74 sulphite mills whose capacity totals 98% of the sulphite capacity of the United States.³ As reported by 44 bleached sulphite pulp mills whose capacity totals 100% of the bleached sulphite capacity of the U. S.⁴ As reported by 61 unbleached sulphite mills whose capacity totals 98% of the unbleached sulphite capacity of the U. S.⁵ As reported by 9 mills, representing all mills producing bleached sulphate.⁶ As reported by 34 mills whose capacity totals 94% of sulphite capacity of the U. S.⁷ As reported by 99 mills whose capacity totals 92% of groundwood capacity of the U. S.⁸ As reported by 11 mills.

along more efficient lines. The Coast industry kept in step with manufacturing developments, continuing to keep their plants in the "modern" class.

Much attention was paid to sulphite cooking methods. Chemipulp systems were installed by a large proportion of the sulphite mills together with the high pressure acid system.

Interest was shown in experimental work with sodium, magnesium and other cooking bases with the idea of displacing the calcium base providing the experiments proved practicable.

Automatic instrument control of sulphite cooking won more adher-

ents through better instruments and more effective application of the instruments.

Bleaching, too, came in for improvements in both methods and equipment. Progress was made in the bleaching and semi-bleaching of kraft pulp.

Improvements were made in a number of mills in the drying of paper through the employment of new types of dryer temperature control, both automatic and semi-automatic.

Wood Rooms

Wood preparation came in for close study by Pacific Coast mills, with more attention being paid to cleanliness than ever before. The operations were surveyed for waste

and the use of special equipment to obtain clean wood became more common.

Water Supplies

The greater attention to cleanliness of the finished produce brought with it a closer examination of the quality of the water used in making pulp and paper. Greater purity was obtained by the building of several new filter plants and by increasing the capacity of those already in operation.

Cleaner water brought with it changes in washing equipment, washers of the latest type being installed by a great many mills.

Screening was studied and improved upon to reduce the dirt count.

UNITED STATES WOODPULP CAPACITY BY REGIONS—1934

(Tons of 2000 pounds)

Region.	Total All Grades*	Sulphite	Sulphate	Groundwood	Special Grades and Soda
New England	1,490,325	566,525	49,600	874,200	
Active	1,405,230	550,250	31,000	823,980	
Idle	85,095	16,275	18,600	50,220	
New York and Pennsylvania	981,305	344,875	0	636,430	
Active	791,585	318,525		473,060	
Idle	189,720	26,350		163,370	
Lake States	1,363,535	525,140	283,340	555,055	
Active	1,339,665	509,640		546,685	
Idle	23,870	15,500	0	8,370	
West Coast	1,296,265	666,345	238,700	391,220	
Active	1,207,450	636,430	192,200	378,820	
Idle	88,815	29,915	46,500	12,400	
South	1,213,650	93,000	1,088,100	32,550	
Active	1,188,850		1,063,300		
Idle	24,800	0	24,800	0	
Total	7,006,310	2,195,885	1,659,740	2,489,455	661,230
Active	6,522,090	2,107,845	1,569,840	2,255,095	589,310
Idle	484,220	88,040	89,900	234,360	71,920

*Except Soda Pulp.

¹ Sources: Production—Pulp Executive Authority records. Capacity—U. S. Pulp Producers Association's Basic Survey of the Pulp Industry.

PACIFIC PULP & PAPER INDUSTRY

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ESTIMATED UNITED STATES CONSUMPTION OF WOODPULP

By Grades—1925-1934*

(Tons of 2000 pounds)

Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	5,590,214	1,426,610	921,291	772,079	1,943,111	469,897	57,226
1926	6,095,279	1,603,433	964,952	913,024	2,068,007	495,127	50,736
1927	5,960,915	1,546,349	1,015,172	997,438	1,856,008	485,208	60,740
1928	6,239,814	1,541,817	1,054,512	1,217,573	1,860,187	485,907	79,818
1929	6,696,322	1,612,459	1,192,370	1,358,181	1,911,114	518,533	103,665
1930	6,414,760	1,543,265	1,095,312	1,371,847	1,859,453	474,369	70,514
1931	5,952,741	1,255,770	1,074,334	1,453,501	1,659,804	376,040	133,292
1932	5,194,367	1,094,831	922,381	1,402,954	1,391,509	291,224	91,468
1933	6,189,602	1,225,537	1,153,778	1,821,656	1,407,832	580,799	
1934	5,969,633	1,217,097	1,148,891	1,776,471	1,442,772	301,552	82,850

Consumption: Production plus imports minus exports.

All in all Pacific Coast mills laid much emphasis during 1934 upon improved quality and did not hesitate to install new equipment to achieve this goal.

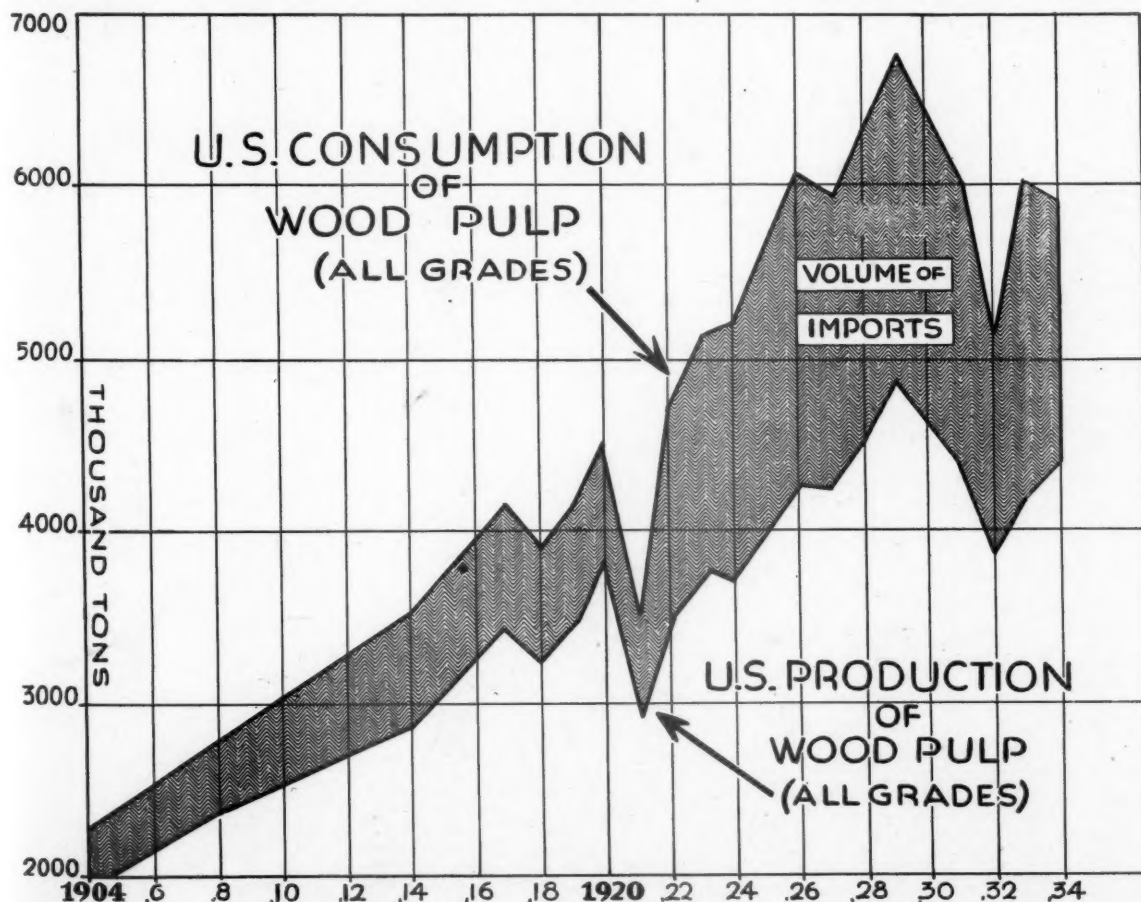
Soundview Enters Field

The Soundview Pulp Company entered the field as an operating organization March 1st, 1934, when it assumed control of the Puget Sound Pulp & Timber Company's 175-ton bleached sulphite pulp mill at Ev-

erett, Washington. A court battle resulted in a decision by the Superior Court of Snohomish County enjoining the proposed merger of the Soundview mill with the Rainier Pulp & Paper Company and the Olympic Forest Products Company. Early in 1935 the Supreme Court of the State of Washington dismissed the injunction against the merger but in the meantime negotiations had been definitely dropped

and the three companies continue to operate separately.

The Spaulding Pulp & Paper Company of Newberg, Oregon, resumed the production of unbleached sulphite pulp late in January, 1934. The Shaffer Pulp Company, after reorganization, resumed production late in March, 1934, only to be shut down by a wood shortage due to the longshoremen's strike. Later in the summer the Shaffer mill started



again and has been running steadily since.

After a long court battle Mr. K. O. Fosse and associates obtained clear title to the Sitka Spruce Pulp & Paper Company's, 60-ton unbleached sulphite pulp mill at Empire, Oregon, early in 1935 and expect to start production around July 1st, 1935.

The Pioneer Paper Company of Los Angeles, makers of roofing, sold an interest to the Flintkote Company of New York during the early summer of 1934. The name was changed to the Pioneer-Flintkote Company and after rebuilding the board machine the new organization entered the board market with a varied line of boxboard.

The Grays Harbor Pulp & Paper Company of Hoquiam, Washington, completed the installation of a fourth digester late in 1934 and began the manufacture of rayon and cellophane pulp. Three Pacific Coast pulp mills now produce rayon pulp for market, Rainier and Olympic Forest Products Companies in addition to Grays Harbor. The Rainier Pulp & Paper Company of Shelton, Washington, pioneered the production of rayon and cellophane pulp on the Pacific Coast.

The Fibreboard Products Company's sulphite pulp and paper mill at Port Angeles, Washington, increased its pulp production through the addition of another digester during the summer of 1934.

The Longview Fibre Company completed a waste paper stock plant in April, 1935, which adds materially to the flexibility of their operations.

Weyerhaeuser

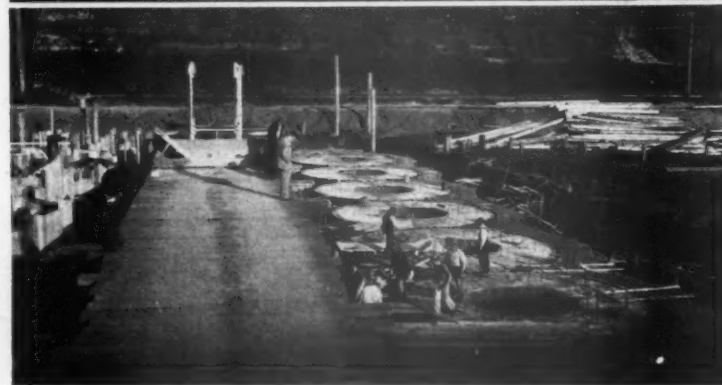
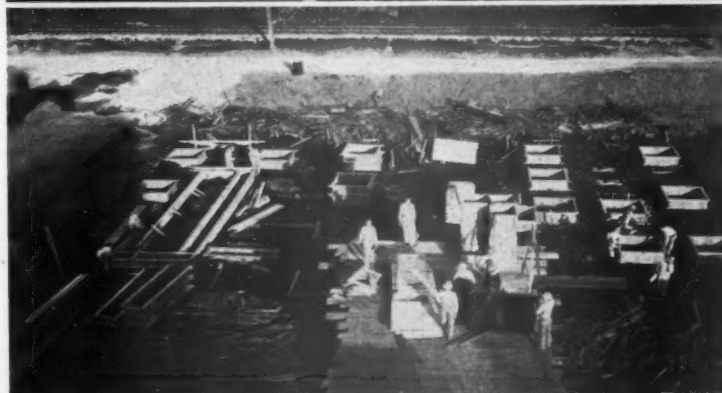
The middle of February, 1935, the Weyerhaeuser Timber Company announced that the second unit of its Pulp Division would be constructed immediately at the site of Mill A in Everett, Washington. Operation is scheduled to begin in December of this year. The mill will produce 150 tons daily of unbleached sulphite pulp.

Flax Straw

The utilization of Oregon flax straw for making cigarette paper on a commercial basis became a possi-

CONSTRUCTION PROGRESSES

on the new 150-ton unbleached sulphite pulp mill of the Weyerhaeuser Timber Company's Pulp Division at Everett, Washington. These photographs were taken early in May, and show the foundations in place for the six digesters and two acid accumulators.



PACIFIC PULP & PAPER INDUSTRY

PULP WOOD CONSUMPTION—1923-1934

Pacific Coast States and British Columbia

19

	1923 Cords	1924 Cords	1925 Cords	1926 Cords	1927 Cords	1928 Cords
Washington	191,751	230,299	241,150	303,787	455,664	651,657
Oregon and California	205,199	205,968	209,349	232,989	267,233	308,264
British Columbia*	267,000	266,000	284,100	318,500	364,000	383,008
Total Pacific Coast	663,950	702,267	734,599	857,276	1,076,899	1,342,929
	1929 Cords	1930 Cords	1931 Cords	1932 Cords	1933 Cords	1934† Cords
Washington	956,132	1,000,001	1,025,878	688,326	1,094,852	1,334,000
Oregon and California	340,745	351,053	319,876	265,470	241,841	288,000
British Columbia*	352,444	373,397	363,688	304,185	362,508	436,000
Total Pacific Coast	1,649,321	1,724,451	1,709,442	1,257,981	1,699,201	2,058,000

Source—U. S. figures from U. S. Dept. of Commerce, Bureau of Census; B. C. Figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

*British Columbia figures prior to 1928 are not shown separately and are estimated on basis of 1.23 cords of wood consumed per ton of wood pulp produced.
†Estimated.

bility when the Champagne Paper Company of New York entered into contracts with Oregon flax growers early in 1935 for 2,000 tons of flax straw. This is to be shipped to the company's paper mills in France for experimental paper production.

If successful it is likely that Oregon will eventually see this branch of the paper industry develop into one of major importance.

Planning Council Report

The Washington State Planning Council was organized early in 1934 by an act of the state legislature, for the purpose of surveying the resources of the State of Washington to determine along what lines economic development should take.

Washington's forests came in for study along with other resources. In January, 1935, the Technical Advisory Committee on Forestry of the planning council released a report on the forest situation in Washington together with a suggested plan for the development of forestry in Washington. This was published in

full in the January, 1935, issue of Pacific Pulp & Paper Industry.

Rayon Pulp

The Pacific Coast continued to increase its production of rayon pulp during 1934 and the first half of 1935. Production figures of this grade are not available. However, approximately 42,000 tons of rayon pulp was shipped from the Pacific Coast in 1934 to rayon mills in Japan. From January 1st to May 1st, 1935, the shipments of Pacific Coast rayon pulp to Japan were running at the rate of 48,000 tons for the year.

In 1934 Japan imported approximately 100,000 tons of rayon pulp, according to the U. S. Department of Commerce.

According to a report made by the North American Rayon Company to the American Chemical Society at its annual meeting in New York late in April, wood pulp is steadily displacing cotton as a base for rayon of the viscose type.

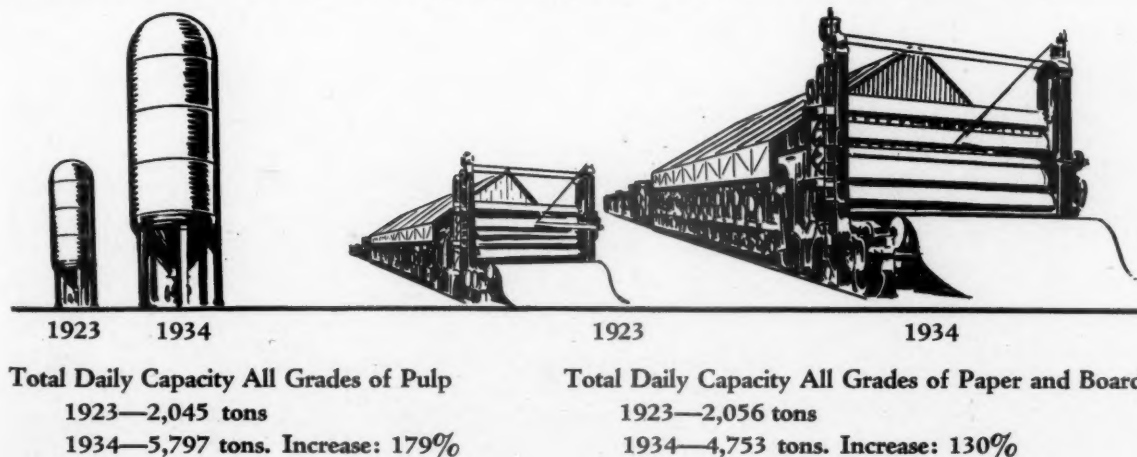
According to North American's report, one reason for the swing to wood pulp is that the market for chemical wood pulp is far better stabilized than is the cotton market, with the result that rayon manufacturers are enabled to figure more advantageously on the cost of their raw material when using pulp instead of cotton.

The report went on to state that in 1934 viscose rayon manufacturers of the United States producing 77.5 per cent of all rayon made in this country used 90,000 tons of wood pulp and but 28,000 tons of cotton linters.

The report adds that many rayon producers who still use linters are now experimenting with a new type of refined wood pulp.

Several Pacific Coast pulp mills are experimenting with the further refining of wood pulp for rayon and also for plastics, lacquers, artificial leathers and celluloid mastics.

COMPARATIVE GROWTH OF PACIFIC COAST PULP AND PAPER INDUSTRY—1923-1934



FOREIGN PULP MILLS SOLD ... 82%

U. S. PULP MILLS SOLD 18%

Of All Pulp Sold in the United States in 1934

AMERICAN producers of pulp for the market enjoyed but a very small share of the total United States business in 1934, obtaining only 18% as compared to the 82% of the total sales secured by foreign pulp mills.

Foreign pulp dominated the American market in 1934 as has been the case for many years.

Pulp Imports

Total pulp imports in 1934 amounted to 1,612,615 long tons, as compared with 1,733,744 long tons in 1933, a decline of 121, 129 long tons or 7%.

However, the value of pulp imports in 1934 was 7.6% higher or \$4,379,259, than the value of 1933 imports. 1934 total value was \$61,778,269 and 1933 total value was \$57,399,010.

Last year's imports were exceeded in tonnage only by the years 1929, 1930 and 1933, and the 1934 value was greater than for any year since 1929.

Sweden was again the largest supplier of wood pulp with 722,068 valued at \$25,624,888 as compared with 801,519 long tons in 1933 valued at \$24,096,698.

Canada was second as the largest supplier of wood pulp to the United States with 483,758 long tons valued at \$20,302,452, compared to 1933 imports from Canada of 477,124 long tons valued at \$18,001,772.

Finland ranked third as a source of wood pulp imports with 193,109 long tons of a value of \$6,734,505 compared with 207,875 long tons of a value of \$6,453,588.

Norway was again in fourth place in the exports of pulp to the United States with 88,373 long tons of a value of \$4,369,160. 1933 imports from Norway were 105,035 long tons valued at \$3,867,528.

Germany was in fifth place in 1934 as a source for wood pulp imported into the United States with 81,991 long tons valued at \$3,264,548, representing an increase in both ton-

nage and value over 1933 imports from Germany of 77,462 long tons valued at \$2,638,922.

Imports of wood pulp from all other countries in 1934 amounted to 43,316 long tons valued at \$1,482,736 as compared with 64,729 long tons of a value of \$2,340,502 in 1933.

The total groundwood imports

97% of 1934 U. S. Pulp Imports From Five Countries

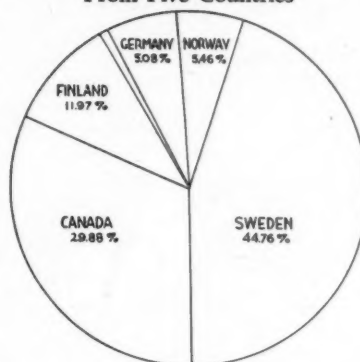
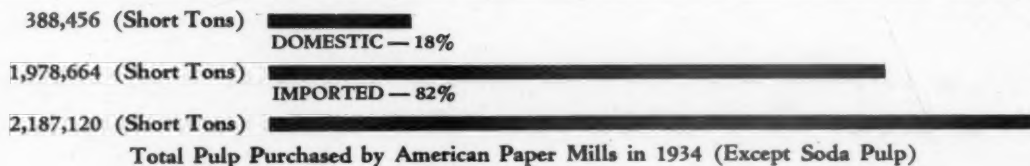


TABLE SHOWING PROPORTIONS OF DOMESTIC MARKET FOR PULP SUPPLIED BY AMERICAN PULP MILLS AND FOREIGN PULP MILLS*—1934

Tons—2,000 Lbs.

TOTALS By Grades.	Pulp Produced By U. S. Mills for Sale in Domestic Market—1934	Pulp Imported Into the United States 1934
Total—All Grades (Except Soda Pulp)	388,456	1,798,664
Total—Sulphate	361,229	977,773
Bleached Sulphite	282,738	398,142
Unbleached Sulphite	79,375	675,491
Total—Sulphate	4,382	481,435
Bleached Sulphate	1,191	54,068
Unbleached Sulphate	3,191	427,367
Total Groundwood	21,486	189,374
Total—Miscellaneous, Damaged and Off-Quality	1,865	153

*Table prepared by Pacific Pulp & Paper Industry from United States Pulp Producers Association data on 1934 wood pulp production, shipments and stocks; and from import data supplied by the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce. Imports in this table have been changed to short tons for the purpose of comparison with American production figures.



PACIFIC PULP & PAPER INDUSTRY

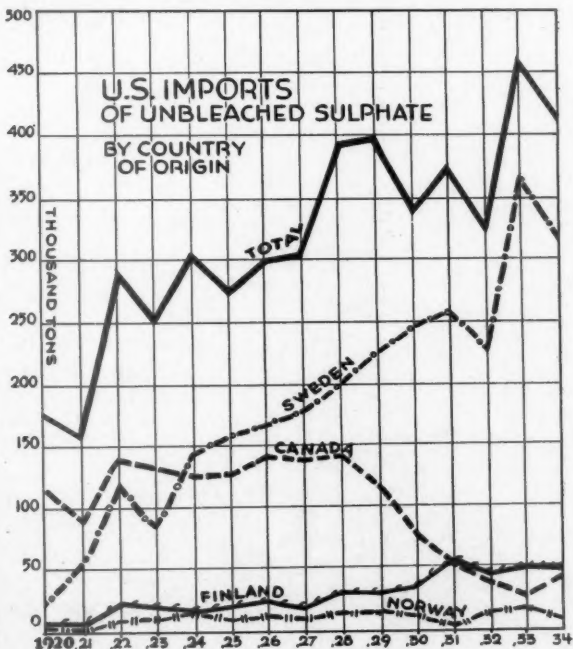
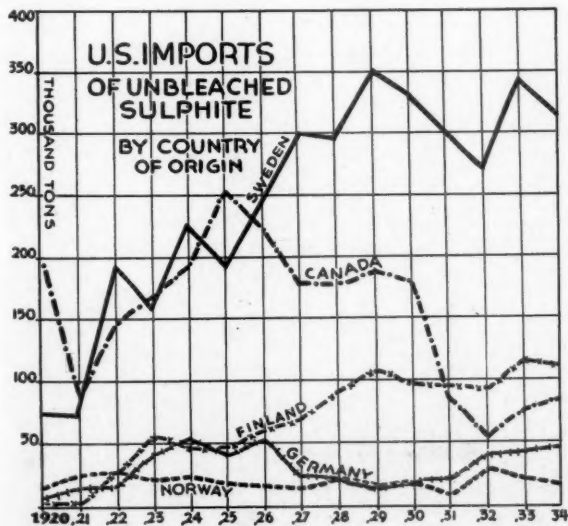
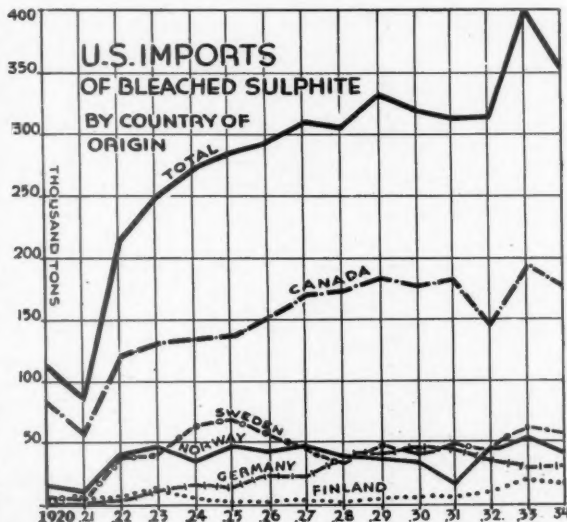
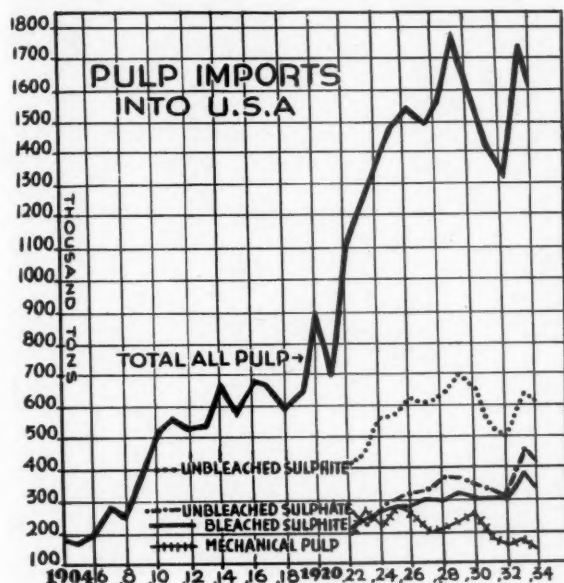
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UNITED STATES

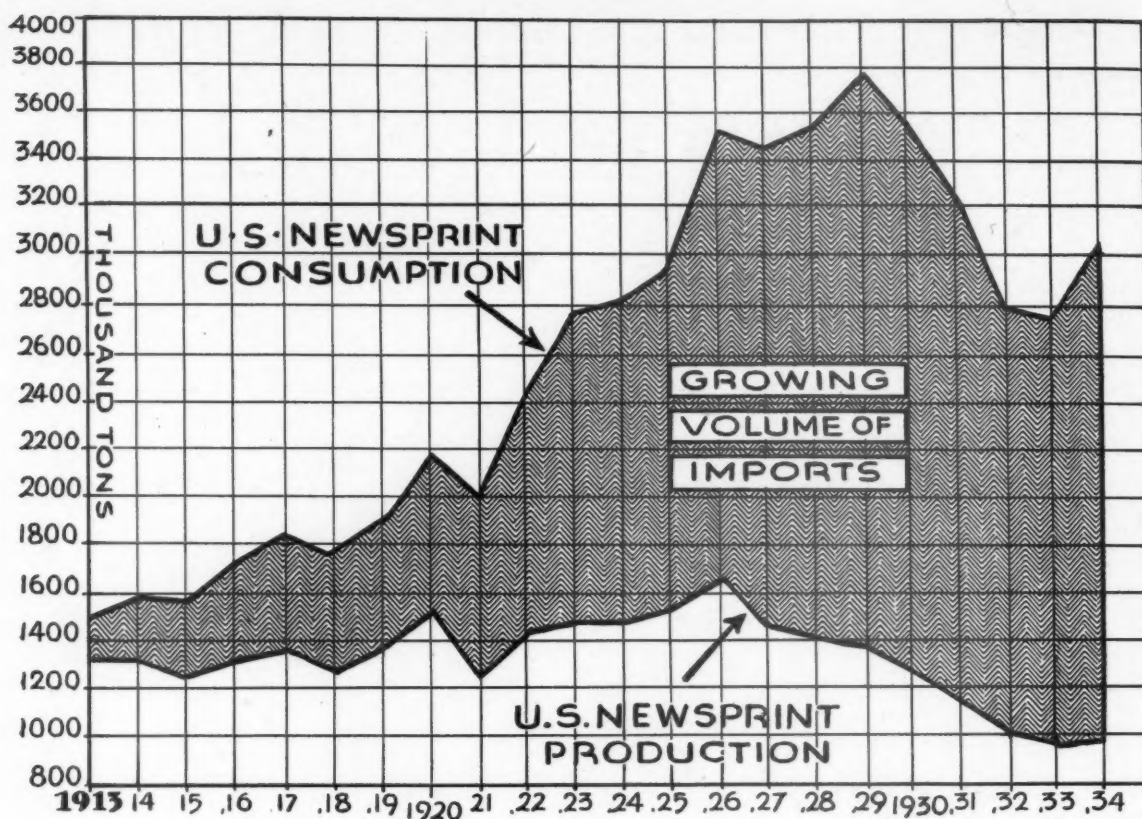
Wood Pulp Imports by Grades and Countries of Origin—1934
(Long Tons of 2,240 Lbs.)

Grade—	COUNTRY OF ORIGIN						Total by Grades
	Canada	Finland	Germany	Norway	Sweden	Others	
Mechanical Wood Pulp	139,815	8,126	—	4,703	15,812	628	169,084
Sulphite—Total	260,287	132,616	81,980	69,407	374,237	40,174	958,601
Unbleached	80,867	112,562	47,319	22,529	314,984	24,856	603,117
Bleached	179,320	20,054	34,661	46,878	59,253	15,318	355,484
Sulphate—Total	77,019	52,367	—	14,263	332,019	2,460	478,128
Unbleached	46,215	49,627	—	13,811	317,740	2,460	429,853
Bleached	30,804	2,740	—	452	14,279	—	48,275
All Others	6,737	—	11	—	—	54	6,802
Total (By Countries)	483,758	193,109	81,991	88,373	722,068	43,316	1,612,615
Value	\$20,302,452	\$6,734,505	\$3,264,548	\$4,369,160	\$25,624,868	\$1,482,736	\$61,778,269

Source—Import Statistics, U. S. Department of Commerce.



PACIFIC PULP & PAPER INDUSTRY



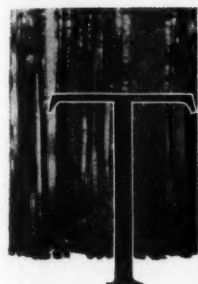
SOURCES OF NEWS PRINT USED IN THE UNITED STATES

(Tons in Round Numbers)
Source: News Print Service Bureau

	U. S. Production	U. S. Exports	Imports into the U. S. From			Available for Consumption
			Canada	Newfoundland	Europe	
1913	1,305,000	43,000	219,000	-----	1,000	1,482,000
1914	1,313,000	61,000	310,000	-----	5,000	1,567,000
1915	1,239,000	55,000	367,000	-----	1,000	1,552,000
1916	1,315,000	76,000	468,000	-----	-----	1,707,000
1917	1,359,000	94,000	558,000	-----	1,000	1,824,000
1918	1,260,000	97,000	596,000	-----	-----	1,759,000
1919	1,375,000	111,000	628,000	-----	3,000	1,895,000
1920	1,512,000	49,000	679,000	1,000	50,000	2,193,000
1921	1,225,000	17,000	657,000	-----	135,000	2,000,000
1922	1,448,000	26,000	896,000	-----	133,000	2,451,000
1923	1,485,000	16,000	1,109,000	-----	200,000	2,778,000
1924	1,481,000	17,000	1,197,000	4,000	156,000	2,821,000
1925	1,530,000	23,000	1,295,000	20,000	133,000	2,955,000
1926	1,684,000	19,000	1,658,000	94,000	100,000	3,517,000
1927	1,486,000	12,000	1,776,000	89,000	122,000	3,461,000
1928	1,418,000	11,000	1,926,000	114,000	116,000	3,563,000
1929	1,392,000	19,000	2,195,000	132,000	96,000	3,796,000
1930	1,282,000	10,000	1,989,000	156,000	134,000	3,551,000
1931	1,157,000	10,000	1,754,000	160,000	151,000	3,212,000
1932	1,009,000	8,000	1,533,000	114,000	144,000	2,792,000
1933	946,000	11,000	1,545,000	95,000	153,000	2,728,000
1934	957,000	23,000	1,956,000	107,000	147,000	3,144,000

PULPWOOD RESOURCES Of WESTERN WASHINGTON and OREGON

Complete Compilation Shows Cubic Foot Totals in
All Diameter Classes From 4 Inches Up*



THE pulp woods of Western Washington and Western Oregon total approximately 40,537,000,000 cubic feet. Western Washington has about 28,200,000,000 cubic feet of this total; Western Oregon has about 12,350,000,000 cubic feet. The species classified as pulp woods include: Western hemlock, Sitka spruce, Engelmann spruce, white fir, amabilis fir, noble fir, alpine fir and mountain hemlock.

The above figures are recent totals arrived at by the Forest Survey of the United States Forest Service, which has been working on a physical inventory of the timber resources of this region since 1930. The figures are subject to correction in final tabulations.

Table I shows the volume by pulp

wood species in Western Oregon and Western Washington.

Table II gives the volume by species and by counties and by districts for the same region.

Table III is confined to the distribution of western hemlock in this region, its purpose being to show the types of growth, by diameter classes, of this wood.

Survey Covers Limited Area

It should be clearly understood that these figures cover only a part of the Pacific Coast. They cover only the region from the summit of the Cascades to the Pacific ocean; from the California line north to the British Columbia line. They do not include that vast storehouse of pulp woods . . . Alaska . . . they do not include the redwood region of California, where there are very substantial stands of white fir in addition to redwood. They do not include the eastern part of either Washington or Oregon, the state of Idaho, western Montana or the pine region of California, where hemlock and the true firs are found in large volume.

Perhaps it would be best to say that the figures represent the available pulp timber on that part of the Pacific coast which has seen the major part of the pulp and paper development so far as it has occurred within the United States.

Cubic Foot Most Accurate Measure

The cubic foot figures as given are actual cubic contents of the tree. To get at the actual amount of wood in any body of timber, cubic footage is by far the most accurate gauge of the actual amount of wood available. The compilations cover all the softwood pulp species from 4-inches in diameter, breast height, scaled inside the bark, up to the largest timber found.

Figures Are Conservative

There is, of course, some reforesting land with timber less than 4 inches in diameter, which, before many years, will attain pulping size. This is not included in the estimates. The figures used in this article, as is always the case with United States Forest Service figures, are conservative. By their very con-

TABLE I

VOLUME IN CUBIC FEET OF PULP WOODS FOR ALL OWNERSHIPS IN WESTERN WASHINGTON AND WESTERN OREGON

Species—	Western Oregon	Western Washington	Totals
Western Hemlock	6,439,886,000	18,654,070,000	25,093,956,000
Sitka Spruce	1,145,377,000	1,625,924,000	2,771,301,000
Engelmann Spruce	46,643,000	9,259,000	55,902,000
White Fir	1,652,378,000	314,023,000	1,966,401,000
Amabilis Fir	763,712,000	6,567,606,000	7,331,318,000
Noble Fir	1,338,837,000	614,175,000	1,953,012,000
Alpine Fir	24,675,000	37,234,000	61,909,000
Mountain Hemlock	931,527,000	372,386,000	1,303,913,000
Totals	12,343,035,000	28,194,677,000	40,537,712,000

*This is the complete survey in cubic feet of pulpwood resources of Western Washington and Western Oregon of all pulping species 4 inches in diameter and up, breast height, and it is not to be confused with the survey published in the 1934 May-Review Number of this journal, which

covered only the pulping species 16 inches and up, breast height, in board feet. The present article not only includes the data published a year ago but adds the volume of pulping species from 16 inches down to and including 4 inches and presents the entire survey in cubic feet, a more accurate basis of pulpwood measurement.

PACIFIC PULP & PAPER INDUSTRY

TABLE II
TOTAL CUBIC FOOT VOLUME OF ALL SOFTWOODS IN THE DOUGLAS FIR REGION
Old Growth—Understory—Young Growth Included—In Thousands of Cubic Feet

OREGON.	Western Hemlock All National Ownerships	Hemlock Forests	Sitka Spruce All National Ownerships	Engelmann Spruce All National Ownerships	White Fir All National Ownerships	Amabilis Fir All National Ownerships	Noble Fir All National Ownerships	Alpine Fir All National Ownerships	Mountain All National Ownerships	Hemlock National Forests
Clatsop County	995,153	262,681	5,938	148,305	884	3,883	76	27,590	306	5,180
Columbia County	41,912	66,699	2,324	273	4,534	30,306	27,590	2,812	60,544	5,180
Washington County	122,019	103,655	2,482	44,361	43,697	30,306	54,228	2,812	60,544	5,180
Multnomah County	110,368	95,032	75,626	70,927	65,320	55,462	54,228	2,812	60,544	5,180
Hood River County	859,455	694,885	16,126	126,839	120,055	251,583	199,535	8,404	8,308	108,545
Clackamas County	15,298	1,414	3,834	18	402	402	1	1	1	1
Yamhill County	165,277	8,807	9,755	17,756	947	19,408	89	3,667	3,628	63,017
Polk County	331,297	228,306	10,119	8,659	49,548	48,854	62,035	3,667	3,628	63,017
Marion County	22,124	749	26,385	407	109,630	89,720	174,604	5,475	5,113	490,811
Benton County	1,035,885	386,749	61,048	10,992	123,670	113,372	79,471	1,860	1,787	490,811
Linn County	736,000	433,702	84,678	60,711	142	60,681	66	1,860	1,787	490,811
Lane County	655,956	62,552	2,061	142	811	12,743	32	1,491	1,487	198,469
Tillamook County	416,167	67,732	3,198	886	28,017	42,690	215,214	16	7	198,469
Lincoln County	483,836	223,040	112,919	4,759	42,691	12,743	32	1,491	1,487	198,469
Douglas County	234,235	8,897	60,723	4,759	42,691	12,743	32	1,491	1,487	198,469
Coos County	94,367	49,807	72,974	36,484	240,576	207,820	632	418	126	94
Curry County	3,760	2,682	665,084	327,231	763,712	524,655	1,338,837	1,056,026	24,675	23,850
Josephine County	50,078	33,411	665,084	327,231	763,712	524,655	1,338,837	1,056,026	24,675	23,850
Totals Oregon	6,439,886	2,403,235	1,145,377	95,076	46,643	45,714	1,652,370	803,497	763,712	524,655
WASHINGTON	1,184,345	439,933	8,300	4,033	205	74	11,489	6,866	589,017	312,863
Skagit County	1,453,572	34,227	14,310	126	103	103	13,645	817	689,764	28,564
Snohomish County	818,269	417,337	8,459	6,740	103	103	10,860	8,803	442,450	331,128
Whatcom County	6,153	280	2,594	280	280	280	2,594	280	280	280
Island County	11,686	516,040	42,722	42,722	42,722	42,722	8,604	5,512	606,752	353,794
San Juan County	2,598,772	1,168,651	315,283	131,957	253	253	16,014	10,731	1,156,717	680,910
Challam County	364,913	324,768	494	253	253	253	2,505	1,873	95,894	95,497
Jefferson County	23,010	47	20,185	47	47	47	277	2,780	399,761	134,096
Kitsap County	1,161,504	323,988	13,345	524	563	563	10,834	3,709	689,810	231,066
Pierce County	1,439,559	322,977	13,345	524	563	563	10,834	3,709	689,810	231,066
King County	48,421	211	227	584	330	330	1,535	4	163	481,406
Thurston County	1,590,076	539,451	12,858	584	330	330	75,679	9,020	572,742	481,406
Lewis County	2,156,635	990,837	388,693	37,456	330	330	7,595	3,343	373,902	293,855
Greys Harbor County	1,529,574	590,837	269,115	37,456	330	330	7,595	3,343	373,902	293,855
Pacific County	372,022	37,516	55,628	4	4	4	70,893	3,023	44,733	47,282
Wahkiakum County	592,311	37,516	55,628	4	4	4	70,893	3,023	44,733	47,282
Cowlitz County	914,110	787,570	1,095	922	7,862	7,862	4,568	809	218,608	580,581
Skamania County	17,771	1,561	81,08	922	7,862	7,862	51,767	40,950	645,158	580,581
Clatsop County	18,654,070	6,018,008	1,625,924	225,321	9,259	8,829	314,023	95,217	6,567,606	3,571,042
Totals—Washington	25,093,956	8,441,243	2,771,301	320,397	55,902	54,543	1,966,401	803,497	7,331,318	524,655
Total Oregon and Washington	31,533,842	14,459,478	4,916,678	640,794	111,804	109,387	3,932,771	1,606,994	14,662,636	10,789,918

PACIFIC PULP & PAPER INDUSTRY

TABLE III

TOTAL CUBIC VOLUME OF WESTERN HEMLOCK
By Diameter Classes in the Douglas Fir Region
In Thousands of Cubic Feet

WASHINGTON.	Merchantable	Understory	Second Growth	Grand Total
North Puget Sound—				
Whatcom County	603,170	131,249	83,850	818,269
Skagit County	915,100	146,450	122,795	1,184,345
Snohomish County	1,106,470	173,678	173,424	1,453,572
San Juan County	132	87	11,599	11,818
Island County	248	916	4,998	6,162
Unit Totals	2,625,120	452,380	396,666	3,474,166
Central Puget Sound—				
King County	1,125,312	135,814	178,433	1,439,559
Pierce County	1,015,785	100,511	45,208	1,161,504
Kitsap County	3,962	5,551	13,531	23,044
Mason County	299,718	55,794	9,401	364,913
Clallam County	2,190,931	219,707	188,134	2,598,772
East Jefferson County	242,229	39,957	44,905	327,091
Unit Totals	4,877,937	557,334	479,612	5,914,883
South Puget Sound—				
Thurston County	24,278	13,224	10,919	48,421
Lewis County	1,317,239	196,496	76,341	1,590,076
Unit Totals	1,341,517	209,720	87,260	1,638,497
Grays Harbor—				
West Jefferson County	1,748,545	208,008	55,768	2,012,321
Grays Harbor County	1,679,975	207,180	269,480	2,156,635
Pacific County	1,081,727	225,497	222,350	1,529,574
Unit Totals	4,510,247	640,685	547,598	5,698,530
Columbia River, Wash.—				
Wahkiakum County	223,968	21,707	126,347	372,022
Cowlitz County	501,133	63,865	59,093	624,091
Clark County	974	4,347	12,450	17,771
Skamania County	698,902	128,289	86,919	914,110
Unit Totals	1,424,977	218,208	284,809	1,927,994
Total Western Washington	14,779,798	2,078,327	1,795,945	18,654,070

Table III

The total cubic foot volume of western hemlock by size classes and by counties is shown in Table III. In the "Merchantable" column is given all timber 16 inches and above in diameter. In the "Understory" column is given the footage found in the understory, mainly in the stands of Douglas fir. In this tabulation the

"Understory" figures include timber from 4 to 16 inches in diameter. In the "Second Growth" column is included the reforesting lands with timber from 4 inches in diameter up. The timber of this land may have been logged, or it may have been destroyed by fire, by insects, or by storms. It is in this type of stand in which the most rapid growth occurs.

Sources of Pulpwood

The pulp and paper mills of the Pacific Coast secure wood from:

1. Logs.
2. Cordwood or Pulp Wood.
3. Sawmill Waste.

The "Understory" wood supply has never been widely used. Yet in many Douglas fir logging operations, over considerable areas, from 15 to 30 cords of "Understory" pulp wood per acre can be obtained. Methods are being gradually developed which make this wood available to the pulp or paper mill and which will provide a large supply of good wood, drawn from a large number of operations, thus serving as a check on log market prices and materially supplementing other sources of supply. Together the "Understory" and "Second Growth" stands approximate 20 per cent of the total western hemlock stand, or 30 per cent of the "Merchantable" classification. Thus the importance of including these classifications in the total is readily seen.

Table IV

Each year fire destroys timber, insects make inroads, nor are all stands fully stocked. Hence the Pacific Northwest Forest Experiment Station, in making up growth predictions by decades, taking these things into consideration estimates growth of all species by decades as shown in Table IV as the realizable mean annual growth. The interesting thing to note in this table is the acceleration in growth by decades, both for Oregon and Washington.

In many of the existing stands growth each year merely offsets losses from other sources. Hence over considerable areas the footage remains unchanged from year to year so far as ordinary causes, such as fire, flood or insects are concerned. But loggers take every year a certain percentage of this timber and this land, as soon as it goes back into production, is the land which shows the substantial gain in footage. This, therefore, is the reason for the estimate which shows an increasing realizable mean annual growth for each decade.

Pulpwood Species Will Increase

Around 33 per cent of the original, or virgin stands, are the pulp woods. The percentage of the pulp woods in the realizable mean annual growth will increase with each year, because in the reforestation that has taken place and is taking place, the percentage of the pulping species will show a constant gain. For the first decade, 1933 to 1943, the real-

izable mean annual growth, if figured at 33 per cent, would total around 1,560,000,000 cubic feet a year of the pulping species; if figured at 40 per cent for the decade 1953 to 1963, the realizable annual growth of the pulping species would be approximately 2,466,000,000 cubic feet. Thus growth of pulp wood alone will be several times the present annual needs of the Pacific Coast pulp and paper mills.

Improved fire protection, and perhaps even more important, better methods of getting logged off land in reproduction, development of methods to hasten growth and decrease damage of all sort, it is reasonable to expect may materially expand the growth per year of the pulp woods.

Table V

In Table V are shown the yields of various woods for pulp purposes as determined by the Forest Products Laboratory, Madison, Wis., as set forth in "The Suitability of American Pulp Woods for Paper Pulp", or Bulletin No. 1485. According to these figures there is little difference in the yield between any of the species, the exceptions being white fir and amabilis fir, both of which show a higher yield by the sulphate process. And both are Pacific Coast woods. The yield of western hemlock is as great as that of the eastern spruces. The yield of Douglas fir is as great as that of the southern pine.

The best wood for pulp making on the Pacific Coast is from the smaller trees, say up to 24 inches in diameter. The yield from all the pulping species on the Pacific Coast is about the same. It takes around two cords to make a ton of chemical pulp and one and one-fourth cords to make a ton of ground wood. The statement appears reasonable, therefore, that as the years pass, the Pacific Coast will have a higher and higher quality of wood from which to make pulp, for the average diameter will gradually decrease.

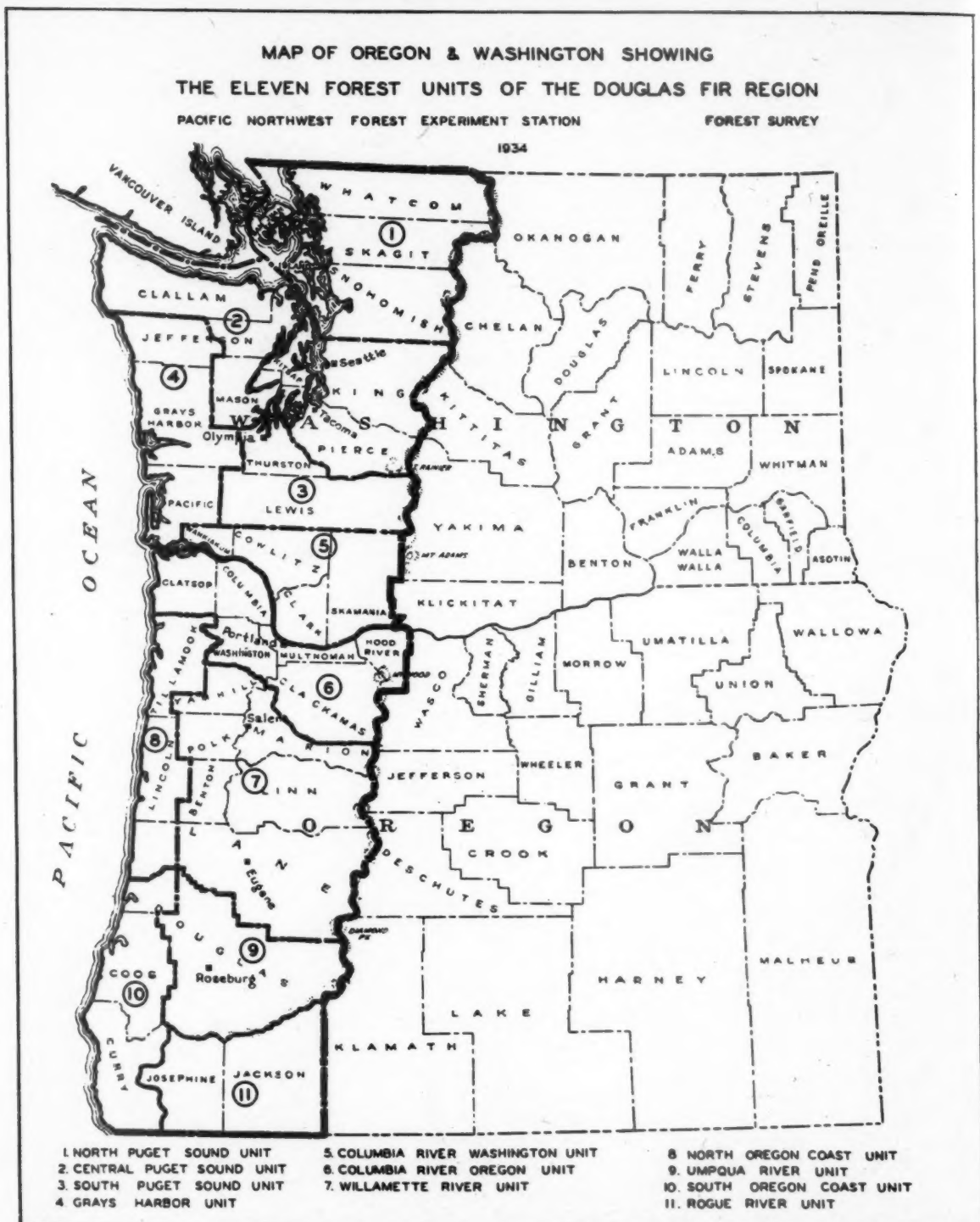
TABLE III — Continued
TOTAL CUBIC VOLUME OF WESTERN HEMLOCK
By Diameter Classes in the Douglas Fir Region
In Thousands of Cubic Feet

OREGON.	Merchantable Understory		Second Growth	Grand Total
Columbia River—				
Clatsop County	714,936	76,124	204,093	995,153
Columbia County	22,591	8,722	10,599	41,912
Washington County	42,861	11,015	12,823	66,699
Multnomah County	93,304	11,528	17,187	122,019
Hood River County	76,877	23,305	10,186	110,368
Clackamas County	643,913	120,899	94,643	859,455
Unit Totals	1,594,482	251,593	349,531	2,195,606
Willamette River—				
Yamhill County	3,347	4,415	7,536	15,298
Polk County	136,920	12,732	15,625	165,277
Marion County	268,537	35,146	27,614	331,297
Benton County	8,902	7,144	6,078	22,124
Linn County	902,761	75,987	57,137	1,035,885
East Lane County	436,287	139,034	85,578	660,899
Unit Totals	1,756,754	274,458	199,568	2,230,780
North Oregon Coast—				
Tillamook County	548,383	56,391	51,182	655,956
Lincoln County	319,622	47,795	48,750	416,167
West Lane County	10,785	33,756	30,560	75,101
Unit Totals	878,790	137,942	130,492	1,147,224
Umpqua River—				
East Douglas County	167,767	156,777	31,573	356,117
Unit Totals	167,767	156,777	31,573	356,117
South Oregon Coast—				
West Douglas County	25,190	23,236	79,293	127,719
Coos County	151,079	57,778	25,378	234,235
Curry County	8,000	78,895	7,472	94,367
Unit Totals	184,269	159,909	112,143	456,321
Rogue River—				
Josephine County	3,760	3,760
Jackson County	15,289	34,678	111	50,078
Unit Totals	15,289	38,438	111	53,838
Total Western Oregon	4,597,351	1,019,117	823,418	6,439,886
Total Western Washington and Western Oregon				
	19,377,149	3,097,444	2,619,363	25,093,956

TABLE IV
TIMBER GROWTH PREDICTIONS*
Realizable Mean Annual Growth—All Species
Cubic Feet

State—	Decade 1933 to 1943	Decade 1943 to 1953	Decade 1953 to 1963
Western Oregon	2,590,573,000	3,021,347,000	3,200,710,000
Western Washington	2,084,871,000	2,691,780,000	2,963,835,000
Totals	4,675,444,000	5,713,127,000	6,166,545,000

*Pacific Northwest Forest Experiment Station, U. S. Forest Service.



"The Pacific Coast has without doubt the growing capacity to produce for ALL TIME a very large volume of timber, of which enough can be of the acceptable pulpwoods to STOCK IN PERPETUITY MORE MILLS THAN THERE ARE AT PRESENT.

"I have given you enough data,

I believe, to show rather convincingly that the pulp and paper industry of western Washington and western Oregon is situated very favorably with reference to its supply of wood. THERE IS ENOUGH PULP TIMBER STANDING IN THE FORESTS NOW TO STOCK ALL

THE PRESENT PLANTS FOR MANY, MANY YEARS, AND TO JUSTIFY CONSIDERABLE EXPANSION OF THE INDUSTRY.

*Thornton T. Munger, Director Pacific Northwest Forest Experiment Station, at the International Convention of TAPPI, Portland, Oregon, September 10th to 13th, 1934.

TABLE V
PULP YIELDS OF VARIOUS WOODS
As Determined By U. S. Forest Products Laboratory
PACIFIC COAST PULP WOODS

Wood	Yield By Sulphite Process Percent	Yield By Sulphate Process Percent
Western Hemlock	45 to 50	45 to 50
Sitka Spruce	45 to 50	45 to 50 ¹
Engelmann Spruce	45 to 50	45 to 50
White Fir	45 to 50	48 to 53 ¹
Amabilis Fir	45 to 50	48 to 53
Noble Fir	45 to 50	45 to 50 ²
Alpine Fir	45 to 50	45 to 50 ²
EASTERN SPRUCES		
Black Spruce	45 to 50	45 to 50
Red Spruce	45 to 50	45 to 50
White Spruce	45 to 50	45 to 50
DOUGLAS FIR AND PINES		
Douglas Fir	45 to 50	45 to 50
Ponderosa Pine	45 to 50	45 to 50
Loblolly Pine	45 to 50	45 to 50 ¹
Lodgepole Pine	45 to 50	45 to 50
Longleaf Pine	45 to 50 ³
Shortleaf Pine	45 to 50	45 to 50 ¹

¹ 38 to 43 percent of pulp for bleaching.

² 40 to 46 percent of pulp for bleaching.

³ 40 to 45 percent of pulp and bleaching.



Photo by U. S. Forest Service
An 80-Year-Old Stand of Western Hemlock and Sitka Spruce
in Oregon.

INTERNATIONAL NAMES CULLEN

The International Paper Company recently announced that R. J. Cullen has been appointed manager of manufacturing and has taken over the duties of E. A. Charlton who has resigned. Mr. Cullen will continue as president of Southern Kraft Corporation, a division of International Paper.

APRIL NEWSPRINT STATISTICS

Production in Canada during April, 1935, amounted to 222,244 tons and shipments to 237,000 tons, according to the Newsprint Service Bureau. Production in the United States was 74,891 tons and shipments 76,961 tons, making a total United States and Canadian newsprint production of 297,135 tons and shipments of 313,961 tons. During April, 26,288 tons of newsprint were made in Newfoundland and 1,337 tons in Mexico, so that the total North American production for the month amounted to 324,760 tons. Total production in April, 1934, was 323,043 tons.

The Canadian mills produced 19,036 tons more in the first four months of 1935 than in the first four months of 1934, which was an increase of 2 per cent. The output in the United States was 17,748 tons or 6 per cent less than for the first four months of 1934, in Newfoundland 9,693 tons or 10 per cent more, and in Mexico 1,531 tons more, making a total increase of 12,512 tons, or 1 per cent.

Stocks of newsprint paper at Canadian mills were reported at 63,553 tons at the end of April and at United States mills 15,577 tons, making a combined total of 79,130 tons compared with 95,956 tons on March 31, 1935.

ERIC FERNSTROM TO SWEDEN

Eric Fernstrom, general manager of the California Fruit Wrapping Mills, Pomona, Calif., left the middle of May for Stockholm, Sweden, having resigned his post with the company. He retains his financial interest and his directorship, however, and his brother, F. O. Fernstrom remains as president of the firm.

Mr. Fernstrom will engage in business in Stockholm through Fernstrom & Co., the parent company of the California mill. His address there will be care Fernstrom & Co., Stockholm 16, Sweden.

REGROWTH in the GRAYS HARBOR AREA

AN EXAMPLE OF THE PACIFIC NORTHWEST'S PERMANENT PULPWOOD SUPPLY

THE DOUGLAS fir region, that area of land stretching from the summit of the Cascades to the shores of the Pacific Ocean in Western Washington and Western Oregon, has a total of 546,000,000,000 feet, log scale, of timber of sawmill log size, according to the Forest Survey, of the United States Forest Service. Of this total, 170,000,000,000 feet, or about 1/3 are the pulping species. These figures do not include the volume of timber on reforesting land, or wood of pulp size upon virgin timber lands where the diameter is below that of sawmill use.

The Douglas fir region embraces 35,127,449 acres; 15,849,289 in Washington and 19,278,160 in Oregon. Slightly less than 85 per cent of the total area of Western Washington is classed as forest land, making a total of nearly 13,500,000 acres of forest land. Of this total 11,649,042 acres is classified as capable of producing coniferous forest stands of commercial character.

For purposes of computing growth and measuring productivity it is customary to divide forest land in this region into five site classes, based upon its productive capacity. Of these five classes, Site I is the best land and Site V the poorest.

Washington Site Land Classification		
Site—	Acres	Per Cent
Site I	320,292	2.8
Site II	3,794,999	32.6
Site III	4,542,091	39.0
Site IV	2,567,905	22.0
Site V	423,755	3.6

Based Upon Tree Height

While site classification has a relation to fertility of the soil, that is not the only consideration embraced within the classification. Land at high altitude, for example, may be very fertile, but because of that elevation its capacity to grow timber is not so great. Therefore site classification is made in the field and is based upon tree height. Site classification, based upon minimum tree height at 100 years are: Site I, 200 feet; Site II, 170 feet; Site III, 140 feet; Site IV, 110 feet; Site V, 80 feet.

Unexcelled Growth

No region in North America, based both upon either theoretical

or actual basis, will grow so much timber per acre per year as will the Pacific Coast strip known as the Douglas fir region. In no region is there found such a full stocking as is found upon the Pacific Coast.

In the May, 1932, issue of Journal of Forestry, I. T. Haig, in comparing the relative wood producing capacity of twelve commercially important conifers presents some illuminating data. In this article redwood with a maximum average annual growth per acre of 310 cubic feet, or 1,930 board feet, leads the list, while the Douglas fir type is third in maximum annual average cubic foot growth of 170, but is second with 1,190 board feet. Slash pine of the south is fourth with 143 cubic feet, but rather well down in the

list with 567 board feet. Details are shown in Table I.

TABLE I

Relative Wood Producing Capacity of Twelve Important Conifers in Terms of Maximum Average Annual Growth.

Species:	Cubic Feet	Board Feet
Redwood	310	1930
Douglas Fir (Cal.)	180	962
Douglas Fir (N.W.)	170	1190
Slash Pine	143	567
White Pine (New Eng.)	136	828
Loblolly Pine	131	750
White Fir	128	750
White Pine (Lake States)	121	739
Idaho White Pine	118	760
Shortleaf Pine	110	558
Longleaf Pine	101	573
Red Spruce	80	310
Jack Pine	79	214
Ponderosa Pine (Calif.)	66	350
Ponderosa (Inland Emp.)	59	298
Western Hemlock	200 (Tentative)	



Dense Second Growth Hemlock, Fir and Spruce in Grays Harbor County, Wash. Hemlock Is the Predominating Species.

As a matter of fact the redwood and Douglas fir types lead the list on the basis of both cubic foot and board foot production.

Timber of different species does not grow at the same rate. Some species have a rapid rate of growth per year during the earlier years of growth, while others grow faster when farther along in the life cycle. This is brought out in Table II.

TABLE II

Relative Rate of Growth Based on Time Needed for Average Tree to Reach 8 inches, Breast High.

Species:	Number Years
Redwood	22
Loblolly Pine	29
Douglas Fir (California)	33
Slash Pine	36
Douglas Fir (N.W.)	37
Longleaf Pine	44
White Pine (New England)	45
Shortleaf Pine	48
White Fir	50
White Pine (Lake States)	53
Ponderosa Pine (Inland Emp.)	55
Ponderosa Pine (California)	65
Jack Pine	70
Idaho White Pine	78
Red Spruce	87

Hemlock Grows Faster Than Fir

It has been the assumption among foresters, based upon available data, that no species grows faster and gives a higher yield per acre of average, actual stocking, than the Douglas fir type. However, from the yield studies being made for the Forest Survey by the Pacific Northwest Forest Experiment Station of the United States Forest Service it appears that the western hemlock stands will average around 30 per cent more wood volume than the Douglas fir stands. This conclusion is tentative and subject to correction, but field studies have been sufficiently general to warrant the reasonableness of the figures.

Species yield in cubic feet per acre per year at specified ages are shown in Table III. To the pulp and pa-

TABLE III
SPECIES YIELD IN CUBIC FEET PER ACRE AT SPECIFIED AGES

SPECIES:	Average Site Index	At 40 Years Cubic Feet	At 60 Years Cubic Feet	At 80 Years Cubic Feet	At 100 Years Cubic Feet
¹ Loblolly Pine	90	5,200	6,700	7,400	-----
¹ Longleaf Pine	80	4,000	5,950	7,350	8,300
¹ Shortleaf Pine	70	4,380	6,000	6,930	7,250
¹ Slash Pine	80	4,600	5,750	-----	-----
¹ Red Spruce	50	1,860	4,780	6,060	6,520
(New England)					
¹ Douglas Fir	160	6,160	10,200	13,360	15,600
² Western Hemlock	160	8,100	14,200	19,000	22,600

¹ From "Comparative Timber Yields," Journal of Forestry, May, 1932.

² Tentative yield tables, subject to correction, Forest Survey, United States Forest Service.

GRAYS HARBOR UNIT

TABLE IV

Volume of Pulp Species in Thousands of Board Feet, Log Scale, Scribner Rule

Species:	Total for Unit	Percent of Total of Unit
Sitka Spruce over 24 inches D.B.H.	3,939,412	7.4
Sitka Spruce 16-24 inches D.B.H.	463,922	.9
Western Hemlock over 20 inches D.B.H.	19,906,593	37.6
Western Hemlock 16-20 inches D.B.H.	3,879,448	7.3
Mountain Hemlock over 16 inches D.B.H.	56,502	.1
White Fir over 16 inches D.B.H.	354,220	.7
Noble Fir over 16 inches D.B.H.	21,483	-----
Silver Fir over 16 inches D.B.H.	6,759,338	12.8
Total All Pulp Species	35,380,919	66.8

D.B.H.—Diameter Breast High.

TABLE V
AREA IN FARM LAND

County—	1920		1930	
	Acreage	% Total Land	Acreage	% Total Land
Grays Harbor	94,767	7.9	89,473	7.5
Jefferson	35,917	3.1	26,046	2.3
Pacific	48,804	8.5	56,430	9.9
Totals	179,488	-----	171,949	-----

GRAYS HARBOR UNIT

TABLE VI

Area in Acres of Pulping Species

Species	Acres	% Total Acreage
Sitka Spruce over 24" D.B.H.	69,328	2.8
Sitka Spruce 6-24" D.B.H.	9,215	.4
Sitka Spruce 0-6" D.B.H.	1,305	-----
Western Hemlock over 20" D.B.H.	676,755	27.3
Western Hemlock 6-20" D.B.H.	125,802	5.1
Western Hemlock 0-6" D.B.H.	85,354	3.4
Mountain Hemlock over 16" D.B.H.	168,995	6.8
Mountain Hemlock under 16" D.B.H.	146	-----
White Fir over 20" D.B.H.	40	-----
Totals	1,136,940	45.8

per operation which must take into account the probable growth of timber for a future supply of wood they are very illuminating. It may also be said that Sitka spruce stands will yield a volume per year in excess of the Douglas fir stands.

Grays Harbor Area a Typical Example

Not only has the Douglas fir region of Western Washington and Western Oregon a large virgin stand of timber, but its ability to grow timber, especially the pulp woods, is of outstanding interest to those firms which have expansion in mind. The following data is given to show what may be found in an area favorable to the growth of pulp woods, the Grays Harbor Unit being taken because it represents a district which has had a number of studies which have produced dependable information.

In presenting the figures, the "Grays Harbor Unit", as outlined by the Forest Survey of the United States Forest Service was selected. This "Unit" embraces Grays Harbor, Pacific and Western Jefferson counties.

Reason for Selection

This "unit" is not what may be termed the economic territory tributary to Grays Harbor. The economic territory will expand or contract, depending upon varying conditions, but the "unit" is one in which the timber may readily be transported to Grays Harbor for pulp and paper manufacture, and, for the sake of illustrating the opportunities to be found at a Pacific coast site for the manufacture of pulp and paper on a sustained supply of wood, backed by carefully selected and conservative figures, this area was selected as an example.

Grays Harbor has excellent shipping facilities, both rail and water. There are ample plant sites. Water is plentiful, low in cost and of a quality suitable for the manufacture of pulp and paper.

Grays Harbor Reforestation

The Grays Harbor unit is one in which sawmill and logging operations have been carried on for many years. It is an area in which nature has demonstrated what may be expected in the reforestation of the pulp species. Within the memory of many of the loggers and sawmill operators of the region, land has been logged, then forgotten and now has on it pulp woods in sufficient volume to log again. What will happen in the future is perhaps most clearly shown by what has happened in the past.

The Grays Harbor unit embraces 2,475,265 acres. Of this total area approximately 2,166,000 acres are classified by the Forest Survey as suitable only for commercial coniferous forest growth. This is about 88 per cent of the land in the unit, compared to 85 per cent for all of Western Washington. The present total stand of all species in the unit, board feet, log scale, sawmill log size, is 52,972,666,000.

66.8% Pulping Species

Of the total timber in the unit, measured on a board foot, log scale basis, there is 35,380,919,000 feet of the pulping species, or approximately 66.8 per cent. Details of the stand by pulping species is shown in Table IV. Hemlock is the outstanding species in volume.

33% Logged

Of the total land in the Grays Harbor unit approximately 870,000 acres have had the timber removed by logging, by fire, insect, storm and the clearing of land for farms, cities and other causes. This is roughly about 33 per cent.

Farm Land Returning to Forest

In 1920, according to the Forest Survey, farm land acreage in Grays Harbor, Jefferson and Pacific counties (note that all of Jefferson County is included) totaled 179,488, a small fraction of the total land in all three counties. Less than one-third of this land was improved farm land. In 1930 the total farm land in the three counties was 171,949 acres, and the percentage of improved farm land had not greatly increased. In other words, the conclusion is tenable that the percentage of lands which will be used for agricultural purposes is decreasing

rather than expanding and that, therefore, the deforested land from logging will go back into timber rather than into farms. Details for the three counties are shown in Table V.

Table VI—Acreage in Pulping Species

In Table VI is shown the total acreage in the Grays Harbor unit of the pulping species. The predominant acreage in hemlock is again shown. In this connection it should be remembered that in the Douglas fir types a certain amount of hemlock will be found as well as Sitka spruce and the white firs.

**GRAYS HARBOR UNIT
TABLE VII
Degree of Stocking in Age Classes in Acres**

	Sitka Spruce 0-6" D.B.H.	Sitka Spruce 6-24" D.B.H.	Western Hemlock 0-6 D.B.H.	Western Hemlock 6-20" D.B.H.
10 Years—				
Good	335	-----	48,905	-----
Medium	115	-----	27,285	-----
Poor	855	-----	6,765	-----
20 Years—				
Good	-----	-----	1,965	6,150
Medium	-----	245	185	4,330
Poor	-----	-----	-----	-----
30 Years—				
Good	-----	2,445	249	20,592
Medium	-----	1,070	-----	22,580
Poor	-----	220	-----	1,650
40 Years—				
Good	-----	2,365	-----	16,319
Medium	-----	1,060	-----	18,685
Poor	-----	135	-----	1,040
50 Years—				
Good	-----	145	-----	6,613
Medium	-----	105	-----	3,290
Poor	-----	-----	-----	570
60 Years—				
Good	-----	125	-----	9,340
Medium	-----	210	-----	5,376
Poor	-----	90	-----	445
70 Years—				
Good	-----	-----	-----	5,700
Medium	-----	-----	-----	585
Poor	-----	-----	-----	320
80 Years—				
Good	-----	260	-----	160
Medium	-----	260	-----	1,615
Poor	-----	-----	-----	-----
90 Years—				
Good	-----	-----	-----	-----
Medium	-----	-----	-----	-----
Poor	-----	-----	-----	-----
100 Years—				
Good	-----	-----	-----	-----
Medium	-----	480	-----	272
Poor	-----	-----	-----	-----
Total Acres—	1,305	9,215	85,354	125,802
D.B.H.—Diameter Breast Height.				

Table VI merely shows the acreages in which the species named are the dominant species. This serves to emphasize that the white firs are almost wholly found intermixed with other species. Approximately 46 per cent of the acreage in the Grays Harbor unit is predominately covered by the pulp species.

Table VII

Table VII shows the degree of stocking, by 10 year age classes, of the acres of reforesting land in which the pulp species are dominant. It is a break down of the reforesting acreages shown in Table VI.

Hemlock and Sitka spruce, while found on all site classifications, prefer, in the main, land which is embraced with Site II and Site III. The acreage of coniferous forest land by site for the Grays Harbor unit are:

Site	Acreage
I	188,999
II	1,048,158
III	222,752
IV	96,405
V	15,689

It thus appears that the bulk of the land is especially suitable for the growth of the pulp species, a conclusion which is buttressed by the high percentage of the total virgin stand which is now classed as having pulp woods as the dominant species.

Potential Growth

The Forest Survey, in tentative figures subject to correction, estimates the potential growth per year of the Grays Harbor unit, all species, 75 per cent of full stocking, at 202,121 cubic feet. This is the ideal, the probable full growth capacity of the land if there were no fire losses, if there were no insect attacks and inroads by the other agencies which destroy timber.

A more accurate estimate of the growth as it will occur is shown in Table VII, which is a tentative estimate of the growth for all species which may be expected, based upon the studied rate of growth and taking into consideration losses from fire and other causes in the same ratio that they have occurred in the

past, so far as they could be determined. This is termed the realizable mean annual growth.

Hemlock Has High Growth Rate

Some of the figures accompanying this article may well startle those who are accustomed to the smaller growth per acre per year of pulp species in other sections of the country. In no other region in North America are to be found species, which in natural regrowth, over considerable areas, attain the volume of annual increment which prevails in the Douglas fir region. It is generally recognized that Douglas fir is a wood which reproduces in heavy stands over large areas; it is not so generally realized that Western hemlock has the same reproductive capacity, over substantial areas, and

GRAYS HARBOR UNIT

Table VIII—Realizable Mean Annual Growth—All Species

Cubic Feet—	All Owners Except National Forest		Decade
	Board Feet, Log Scale. Scaled to 12-inch Top.	Board Feet, Log Scale. Scaled to 8-inch Top.	
58,206	258,319,000	350,206,000	1933-1943
82,608	339,679,000	478,856,000	1943-1953
95,565	370,772,000	538,880,000	1953-1963
National Forest			
479	2,777,000	3,319,000	1933-1943
1,130	3,977,000	5,945,000	1943-1953
2,645	6,054,000	11,514,000	1953-1963
All Ownerships			
58,685	261,096,000	353,525,000	1933-1943
83,738	343,656,000	484,810,000	1943-1953
98,210	376,826,000	550,394,000	1953-1963



Photo by U. S. Forest Service

Western Hemlock in Pacific County, Washington. Picture at the left shows 91-year-old trees. Average height 142 feet. Average diameter, breast height, 16 inches. 252 trees per acre.

The photograph at the right shows a 91-year-old stand of Hemlock, 210 trees per acre, average height 160 feet. Average diameter breast height is 17.5 inches.

PACIFIC PULP & PAPER INDUSTRY

TABLE IX

TOTAL CUBIC FOOT VOLUME OF ALL SOFTWOOD PULPWOODS IN GRAYS HARBOR, PACIFIC AND JEFFERSON COUNTIES
Old Growth, Understory and Young Growth Included
In Thousands of Cubic Feet

County:	Western All Ownerships	Hemlock National Forests	Sitka Spruce All Ownerships	National Forests	Engleman Spruce All Own- erships	National Forests	White Fir All Own- erships	Natl. Forests	Amabilis Fir All Own- erships	National Forests	Noble Fir All Own- erships	National Forests	Mountain Hemlock All Own- erships	National Forests
Jefferson	2,339,412	1,168,651	315,285	131,957	-----	-----	16,016	10,731	1,136,717	680,910	-----	-----	18,206	18,206
Grays Harb.	2,156,635	590,837	388,695	37,456	-----	-----	7,595	3,343	373,902	293,855	1,612	-----	3,324	3,324
Pacific	1,519,514	-----	268,115	-----	-----	-----	73,040	-----	34,733	-----	3,023	-----	-----	-----
Totals	6,025,621	1,759,488	973,095	169,413	-----	-----	96,651	14,074	1,545,352	974,765	4,635	-----	21,530	21,530

Grand Total, Three Counties—11,606,154,000 Cubic Feet.

that the rate of growth per year is much larger than Douglas fir, at least for the first 100 years.

In "Comparative Timber Yields", Journal of Forestry, May, 1932, the accompanying maximum annual growth figures, in cubic feet per acre are given:

Loblolly Pine	131
Longleaf Pine	101
Shortleaf Pine	110
Slash Pine	143
Douglas Fir	170

Hemlock Grows Faster Than Douglas Fir

Data which is now being worked up by the Forest Survey on western hemlock indicates that its maximum average annual growth is about 30 per cent above that of Douglas fir, or around 220 cubic feet per acre

per year. While this is a theoretical maximum when all factors are favorable and it is not expected it will be attained, western hemlock does reach this total on some of the smaller sample areas which have been studied by the Forest Survey. For example, one stand totaled 20,000 cubic feet per acre at 86 years of age.

Yield tables by site classes, for western hemlock, in cubic feet, as tentatively set up by the Forest Survey are:

Western Hemlock

Site—	Yield in Cubic Feet at 100 Years
I	28,300
II	24,300
III	18,900
IV	13,000
V	8,400

About two-thirds of the timber of the Grays Harbor unit is now of the pulping species. The total forest land of the unit, land which will probably never be suitable for anything except the growing of forests, exceeds 2,100,000 acres. On all this land the pulping species grow; well over 60 per cent are especially suited to the growth of the pulping species in heavy volume. The reforesting areas of pulp woods show excellent growth. In other words all conditions are extremely favorable for the growth in large volume, on land suited for no other purpose, of pulping woods of demonstrated high quality.

Here then, is available an area exceeded by no similar area in North America for its ability to produce rapidly and in large volume per acre, the most excellent pulp wood.



Pulpwood Cutting in a Fine Western Hemlock Stand, Grays Harbor County, Washington

TABLE X
TOTAL CUBIC FOOT VOLUME OF WASHINGTON HEMLOCK
By Diameter Classes — Grays Harbor Unit
 In Thousands of Cubic Feet

Grays Harbor Unit—	Merchantable Understory		Second Growth	Grand Total
Counties—				
West Jefferson ¹	1,748,545	208,008	55,768	2,012,321
Grays Harbor	1,679,975	207,180	269,480	2,156,635
Pacific	1,081,727	225,497	222,350	1,529,574
Unit Totals	4,510,247	640,685	547,598	5,698,530

¹Only the western part of Jefferson County is included in the Forest Service's Grays Harbor Unit.

TABLE XI
STAND OF HEMLOCK IN GRAYS HARBOR UNIT
 By Ownership and Diameter Classes—In Thousands of Cubic Feet

Grays Harbor Unit. Counties:	Private Ownerships			National Forests			All Other Ownerships			Grand Totals
	Merchantable	Understory	Second Growth	Merchantable	Understory	Second Growth	Merchantable	Understory	Second Growth	
Western Jefferson	429,102	44,060	38,993	775,305	93,857	6,290	544,138	70,091	10,485	2,012,321
Grays Harbor	905,022	102,570	241,747	533,575	52,361	4,901	241,378	52,249	22,832	2,156,635
Pacific	977,098	203,031	205,529				104,629	22,466	16,821	1,529,574
Unit Totals	2,311,222	349,661	486,269	1,308,880	146,218	11,191	890,145	144,806	50,138	5,698,530

SWEDEN GETS BREAK IN TRADE AGREEMENT

When Secretary of State Cordell Hull, on May 25th, signed the unconditional most-favored nation reciprocal trade agreement with Sweden, he bound the United States to make several concessions to Sweden which will affect the pulp and paper industry of this country.

Chemical wood pulp, specifically sulphate, both bleached and unbleached, and unbleached sulphite pulp is to remain on the free list. These classes of pulp together represent about two-thirds of American total imports from Sweden and nearly nine-tenths of the total imports from Sweden on which concessions are made.

Wrapping paper and processed paper board were among the items upon which the American rates of duty were reduced in favor of Sweden and any other country signing trade agreements with the United States.

The concessions in the agreement made to Sweden include reductions on 35 items. Six items are bound at present rates, and three are bound on the free list. The concessions cover articles whose import value in 1934 amounted to \$26,011,000.

Sweden's concessions to the United States include 21 items upon which the duty is reduced, 27 items upon which the present rates are bound, and 16 are bound on the free list. American exports of these

articles to Sweden in 1934 amounted to \$15,122,000.

The agreement with Sweden does not cover mechanical wood pulp, bleached sulphite pulp nor soda pulp. Canada is the principal supplier of mechanical and bleached sulphite pulp.

Details of the trade agreement are not available on the Pacific Coast at the time of going to press.

HILL INTRODUCES PULP TARIFF BILL

Late in May Representatives Samuel B. Hill of Washington introduced in the House of Representatives the following revenue bill known as H.R. 7913. It was referred to the Committee on Ways and Means.

"A bill to raise revenue by taxing imported chemical wood pulp. Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, that Section 601(c) (4) of the Revenue Act of 1932 is amended by inserting before the period at the end of the first sentence thereof, the following: "Chemical wood pulp one-third (1/3) of one cent (1c) per pound gross weight."

If passed Congressman Hill's bill would, upon the basis of 1934 imports of 1,443,531 long tons of chemical wood pulp, provide the Federal government with additional revenue of approximately \$10,783,000.

PRESIDENT SAID TO FAVOR IMPORT QUOTA

In the Washington Merry-Go-Round column, a nationally syndicated column appearing in the Seattle Times for May 6th, appeared the following statement:

"The President says privately that he favors an import quota on pulp and paper from abroad."

DU PONT MAY BUY MORE COAST PULP

Mr. J. E. Hatt, general manager of the Du Pont Cellophane Company, while in Seattle, May 1st, was quoted in the press as saying:

"We have used Washington state pulp in increasingly large quantities during the past five years, and we expect to increase our purchases in this state even further."

Mr. Hatt added that the utilization of cellulose products is in its infancy.

His visit to the Pacific Coast was for the purpose of seeing the mills where the pulp for Du Pont cellophane is manufactured.

Mr. Hatt was district manager in Seattle for the Du Pont interests from 1920 to 1923.

CROWN ZELLERBACH DIVIDENDS VOTED

Crown Zellerbach Corporation announced May 7th that directors had voted dividends of 75 cents a share on the Series A and B preferred stocks. The dividends will be paid June 1 to the stockholders of record May 16.

COMBINED MEETING SUCCESSFUL

TAPPI and Superintendents Discuss Mutual Problems at Portland, May 10th and 11th

INTENSE interest in operating problems marked the well attended joint spring meeting of the Pacific Section TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendent's Association held at the Hotel Multnomah in Portland, May 10th and 11th.

Throughout the two day gathering whenever the business meetings were not in session small groups of superintendents and technical men were to be seen in the hotel lobby animatedly "making pulp and paper."

Much discussion followed the reading of the papers on Saturday, the exchange of experiences and ideas being ably led by G. W. Brown, superintendent of the Inland Empire Paper Company of Spokane. Several superintendents and technical men were heard to remark that this joint meeting had developed more interesting and more valuable discussion of operating problems than had any previous meeting on the Pacific coast.

There was much talk, too, that it was a good idea for the technical men and superintendents to meet together, and the hope was expressed generally that this joint convention would be the forerunner of many to come.



W. A. KELLY
For the Superintendent's Association

Friday

Registration began Friday afternoon, and while there was no program scheduled, many who arrived early played golf at the Portland Country Club, where arrangements had been made by John E. Hassler.

In the evening a good fellowship reception was held with Ray Smythe as chairman and master of ceremonies. It was called "Amateur Night" and the entertainers were of high calibre, bringing many rounds of applause.

Saturday

The business sessions started Saturday morning with a paper by A. D. Wood, superintendent of the Shaffer Pulp Company titled "Shaffer's Four Crew Schedule and How It Works". This paper which provoked much discussion will appear in a later issue of PACIFIC PULP & PAPER INDUSTRY.

Following Mr. Wood, Dr. Leo Friedman, professor of chemistry at Oregon State College, Corvallis, read a paper entitled, "Some Chemical Characteristics of Cellulose Fibre Related to Evaluation for Paper Making". Dr. Friedman called his paper a summary of the subject.

Mr. C. W. Morden, president of the Morden Machines Company, followed Dr. Friedman with a paper titled, "Recent Developments in Methods of Pulp Evaluation for Paper Making." The paper dealt with the application of the laboratory size Morden Stockmaker to the uniform testing of pulp.

Afternoon Session

The afternoon was devoted to four papers and a lively round table discussion.

Mr. William R. Gibson, resident engineer of the Rainier Pulp & Paper Company of Shelton, discussed "Steam and Power in the Pulp and Paper Mill," bringing in a number of new ideas.

Dr. E. C. Jahn, associate professor of forestry, University of Idaho, Moscow, Idaho, presented some of the results achieved by himself and his assistants in their research work on fibre board in a paper titled "Testing the Fibre Board and Board Pulp."

"New Practices in Washing Pulp and Paper Stock" was the subject of the paper by Richard Jennings, sales engineer of the Oliver United Filter Company.

Mr. Harry R. Andrews, in charge of Technical Control for the Powell River Company, offered data on his company's results with the Chemipulp System in making newsprint with a paper titled "Chemipulp in News Mills."

Saturday Evening

Nearly one hundred and seventy attended the banquet and dance in the Grand Ballroom Saturday evening.

At the speakers table were Mr. and Mrs. Carl Braun, Mr. and Mrs. Walter Hodges, Mr. Lawrence Killam, Mr. W. R. Barber, Mr. George Cropper, Mr. G. W. Brown and his daughter-in-law Mrs. H. A. Brown, Mr. W. A. Kelly, Mr. and Mrs. Ferdinand Schmitz, Mr. Myron Black, Mr. and Mrs. H. A. Des Marais, Mr. Cassius R. Peck, who was toastmaster, and the Reverend William G. Everson, the guest speaker.

The singing of old songs was led by H. A. Des Marais, better known to everyone as "Gob". Myron Black, chairman of the Pacific Section of TAPPI, introduced the toastmaster, Cassius R. Peck, prominent Portland attorney. C. W.



W. R. BARBER
For TAPPI

Morden, a past chairman of TAPPI, was called upon by Mr. Peck, and Mr. Morden, after a short review stressing the steady improvement of business generally referred to his many years connection with the pulp and paper industry.

Albert Bankus

During his life in the production side of the pulp and paper industry Mr. Morden said he had been intimately associated with Mr. Bankus and had developed a deep respect for his many fine qualities.

A letter from Mr. Bankus, who is a member of the national executive committee of Tappi, was then read by Mr. Morden.

In his letter, Mr. Bankus expressed regret at being unable to attend the convention, and then stated in part:

"I want to compliment you on the success of your efforts in bringing together in a joint meeting the Pacific Coast Section of TAPPI and the Pacific Coast Division of the Superintendent's Association, which step appeals to me as a sign of progress in the right direction. A good deal of cost in the form of time and expense is involved in such meetings, and the technical and operating forces are naturally complements to each other in the directing of our industry, so it seems quite fitting that these forces should meet in joint convention rather than separately.

"My own connection with the paper industry goes back to a time when we had little of the present day so-called technical staff in pulp and paper plants. The convention you are holding this week is ample indication that we have passed the time when the operating men looked upon the technical men as newcomers in the industry, and to a considerable degree as men of 'theories,' probably theories which would not work. It is not overstating the case to say that when the technical man first began to get a foothold in the pulp and paper plants he was not taken too seriously by the operating man, and no doubt the technical man was compelled to more or less think of the operating man as one who worked by the rule of thumb and whose mind was closed to scientific study and knowledge, but this convention is again ample evidence of the fact that that relationship has undergone a marked change and that so-called practical operating men and technical men have learned to work hand in hand and to rely upon the



A. BANKUS
Whose Letter was Read

other in the working out of our problems.

"It seems strange to me now that for so long we divided the group of men represented in this meeting into what we call 'practical men' and 'theorists.' Perhaps this division was right at one time and perhaps there have been changes in both groups. Certainly we have passed the time when operating men will argue that they alone are entitled to be described as 'practical,' and at the same time it is likely that no technical man will claim a place in the industry unless he can demonstrate that he is also a practical man.

"The most experienced practical operator, who is nothing else, is not enough to serve the needs of an industry which has become so complex and which is built so largely on the products and knowledge of the sciences, particularly in the chemical field. And while there is a place in the world for pure science, a technical man whose analysis and research and theories cannot be put to work in actual operation has no right to expect to earn a livelihood directly from an industry like ours.

"I think, too, that there are very few industries where the practical operating man can get so much help from the practical technical man, and where the scientific technical man has at hand such an adequate laboratory to prove the practical value of his theories.

"The fact that you are meeting jointly means that these two influences have been formed into a working team in this Pacific coast area.

"Besides the value of working together in the individual mills, I think the program of meeting together promises another distinct value. When the operating men who present the problems and must use the answers, meet with the technical men who study the problems and offer the answers, I feel that the meeting itself, without losing the necessary features of good fellowship and entertainment, is bound to emphasize the serious business which brings the two groups together.

"The fact that company executives see a value in such meetings sufficient to justify the cost and effort involved matches the fact that technical and operating men meeting together take seriously the responsibility of producing out of such a meeting some things of real value to their mills and the industry."

Mr. Bankus is assistant executive vice-president of the Crown-Zellerbach Corporation and of the Crown-Willamette Paper Company.

Inspiring Talk

An inspirational address was given by the Reverend William G. Everson of Portland, who was a major in the United States army until 1931.

Reverend Everson stated that selfishness was the chief thing wrong with the world, and he suggested that each person learn how to see life from the point of view of others.

Everyone should seek a better understanding of basic principles, exercise initiative and stand on his own responsibility, Reverend Everson told his interested listeners. No one can delegate all his responsibility.

There are too many people who figure programs for the world who cannot regulate their own lives sufficiently to be good citizens. Men should carry their own responsibility. An individual cannot blame government for what is wrong as it is the individual's responsibility to assume his duties in helping to formulate government policies. Whatever one gives out has a way of returning in larger measure. These are a few of the highlights of Reverend Everson's address.

Toastmaster Peck told the members of TAPPI and the Superintendent's Association that it was their duty to instill inspiration in workmen as work without inspiration is work without purpose. A man should feel pride, Mr. Peck said, in earning his bread; he should feel pride in his workmanship and he

should feel the inspiration that comes from realizing the work he performs is rendering a service to his fellow men.

The Committees in Charge

Mr. W. E. Kelly of Portland served as committeeman for the Superintendent's Association and Mr. W. R. Barber of Camas served as committeeman for TAPPI in arranging the program for the joint meeting. Mr. Barber is first vice-chairman of the Pacific Coast Section of TAPPI.

They were assisted by Mr. Ferdinand Schmitz, chairman of the Pacific Coast Division of the American Pulp & Paper Superintendent's Association, and by Mr. H. A. Des Marais, secretary-treasurer of the organization. Mr. Walter S. Hodges of Portland, secretary-treasurer of the Pacific Coast Section of TAPPI took charge of registration and also assisted in the preliminary arrangements.

The Ladies Committee was headed by Mrs. Kenneth B. Hall, assisted by Mrs. Niles Anderson, Mrs. W. A. Kelly, Mrs. Alex C. Duncan, Mrs. H. A. Des Marais and Mrs. Walter S. Hodges. The ladies program included a bridge party and

tea Saturday afternoon with a theater party for those who preferred a show to bridge. The ladies also attended the Friday night reception and luncheon and dinner Saturday.

Registration

Many attended the meeting who did not register so unfortunately their names are not included in the following list of those who registered:

Mr. and Mrs. Niles M. Anderson, Mr. H. I. Andrews, Mr. R. Austin, Mr. and Mrs. Thos. J. Bannan, Mr. and Mrs. William Barber, Mr. and Mrs. T. H. Beaune and daughter, Mr. M. W. Black, Mr. S. W. Blanchard, Mr. Geo. Bowers, Mr. and Mrs. Carl E. Braun, Mr. W. E. Breitenbach, Mr. Martin Breuer, Mr. Geo. W. Brown, Mr. and Mrs. Roy S. Carey, Mr. O. S. Cauvel, Mr. A. Christianson, Mr. E. F. Clark, Mr. and Mrs. Sidney M. Collier, Mr. N. W. Coster, Mr. J. V. B. Cox, Mr. and Mrs. Geo. Cropper, Mr. T. C. Culver, Mr. and Mrs. H. A. DesMarais, Mr. E. G. Drew, Mr. and Mrs. Alex C. Duncan, Mr. A. C. Dunham, Dr. Leo Friedman, Mr. Uno G. Fryklund, Mr. Wm. R. Gibson, Mr. Lester T. Graham, Mr. and Mrs. Kenneth B. Hall, Mr. and Mrs. J. E. Hassler, Mr. R. S. Hatch, Mr. and Mrs. H. A. Hauff, Mr. H. R. Heuer, Mr. and Mrs. W. S. Hodges, Mr. A. H. Hooker, Jr.

Dr. and Mrs. E. C. Jahn, Mr. Richard Jennings, Mr. W. D. Jorres, Mrs. Joseph

D. Kaster, Mr. B. L. Kerns, Mr. and Mrs. E. E. Kertz, Mr. P. B. Keyes, Mr. Lawrence Killam, Dr. E. C. Lathrop, Mr. J. G. Long, Mr. John C. Mannion, Mr. and Mrs. Bill Marshall, Mr. and Mrs. Ned Menzies, Mr. Herman Meyers, Mr. C. W. Morden, Mr. and Mrs. A. G. Natwick, Mr. A. W. Neubauer, Mr. Sigurd Norman, Mr. and Mrs. R. S. Painter, Mr. and Mrs. R. T. Petrie, Mr. W. A. Prier, Mr. and Mrs. A. S. Quinn, Mr. and Mrs. Ralph Reid, Mr. B. W. Sawyer, Mr. Ray Schadt, Mr. and Mrs. Ferdinand Schmitz Jr., Mr. Harlan Scott, Mr. F. C. Shaneman, Mr. and Mrs. B. L. Shera, Mr. and Mrs. D. L. Shirley, Mr. Ray Smythe, Mr. and Mrs. E. G. Thompson, Mr. and Mrs. V. L. Tipka, Mr. and Mrs. T. J. Waltmon, Mr. Edward A. Weber, Mr. F. J. Weleber, Mr. Bill Williamson, Mr. Wm. R. Willets, Mr. A. D. Wood.

Mr. Geo. A. Gladding, Mr. Leonard McMaster, Mr. and Mrs. G. C. Brewster, Mr. Chas. Fuhrmeister, Mr. Wm. A. Kaye, Mr. and Mrs. H. D. Cavin, Mr. Geo. F. Hebert, Mr. C. V. Smith, Mr. C. M. Carmichael, Mr. and Mrs. M. H. Bennett, Mr. Jas. L. McCarthy, Mr. J. W. Martin, Mr. J. W. Cronin, Mr. R. G. McKenzie, Mr. P. W. Padgett, Mr. Bjorn Benson, Mr. M. Kinsey, Mr. H. A. Sutcliffe, Mr. F. W. McKenzie, Mr. J. E. Walz, Mr. J. Scheuerman, Mr. W. M. Osborne, Mr. H. C. Graham, Mr. and Mrs. H. W. Guettler, Mr. and Mrs. M. C. Kaphingst, Mr. and Mrs. Larry K. Smith, Mr. A. M. Mears, Mr. F. H. Johnson, Mr. C. R. Rudesill, Mrs. Geo. Douglas, Mr. Ben G. Gellenbeck, Mr. J. M. Tedford.

JAPAN THREATENS CANADA WITH TARIFFS

The Far Eastern trade outlook became more uncertain than ever for British Columbia pulp and paper manufacturers this month when cables from Tokio announced that the Japanese government, dissatisfied with the present trend of business between Japan and Canada, would raise the tariff against goods from Canada.

The Japanese trade council has arbitrary powers to raise the tariff 100 per cent against countries which, like Canada, operate under an artificial exchange arrangement that offsets to some extent Japan's depreciated currency.

Canada has been selling goods to the value of \$16,000,000 a year to Japan, and in return has been getting about \$4,000,000 worth of Japanese goods—an unfavorable balance so far as Japan is concerned on the basis of 1 to 4.

What Japan asks is that, for customs purposes, her currency be valued, not at par, as is now done, but at the depreciated rate. At par, the yen is 49 cents. Depreciated, it is 28 cents. Valuation for customs purposes is on the basis of par. Then

a dumping duty is added. Unless the currency situation is straightened out to the satisfaction of Tokio higher duties will be imposed by the Japanese government on a selected list of imports in pursuance of legislation adopted May 1 for the distinct purpose of retaliation against countries which discriminated against Japan.

Eastern Canadian manufacturers are opposed to making any change because they fear a flood of cheap Japanese merchandise entering Canada in competition with their wares, but British Columbia exporters, including pulp and paper men, are naturally anxious to maintain trade harmony with Japan so as not to interfere with their sales in that country.

A prohibitive tariff on pulp and paper would be a hard blow to face just now.

Last year Japan bought \$3,331,000 worth of pulp and paper products from British Columbia, chiefly from Powell River Company, Pacific Mills, Ltd., and British Columbia Pulp & Paper Company. Other forest products, chiefly lumber and logs, represented a value of \$2,250,000. Canned fish, zinc and lead comprise the bulk of B. C.'s other ex-

ports to Japan, which incidentally represent more than half Canada's total sales to that country.

Premier Bennett has ordered an enquiry into Japan's protest. He has asked for details of her complaint and has also sought data from the League of Nations with a view to ascertaining the extent of the reported rise in Japanese living and production costs which has been a factor in persuading the Tokio government to ask a new trade deal with Canada.

British Columbia pulp and paper companies were advised by their representative, E. W. James, chairman of the Kobe chamber of commerce, that, while Japan was determined to apply quotas or other restrictive measures to Canadian goods unless Canada agreed to open the doors to Japanese merchandise, efforts were being made to adjust the complaint so as to maintain the friendship that has in the past prevailed between the two nations.

Reports from other sources indicated that Japan had chosen the Canadian situation as a means of testing the strength of the Ottawa trade agreements which have shut Japanese goods from many British Empire markets.

COOPERATION IS THE ANSWER TO MERCHANDISING PROBLEMS

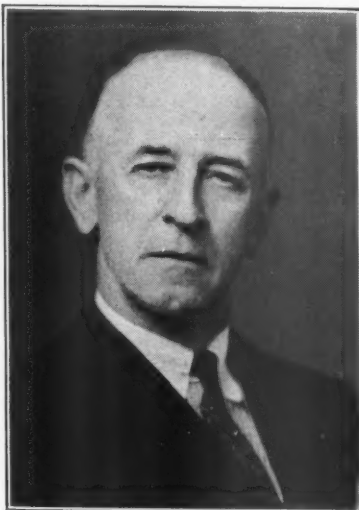
By O. W. MIELKE, General Manager, Blake, Moffitt & Towne

It was a source of considerable satisfaction to find that even though the National Recovery Act as well as all code activities have been threatened, the members of the Regional Code Committee as well as the large group of executives attending the annual convention of the Pacific States Paper Trade Association at Del Monte, Calif., very enthusiastically resolved to continue to bend every effort to carry on under the provisions of this law until such time as congress may conclude definitely whether it will be extended or modified.

The answer is very clear. Paper merchants recognize that with all the faults and defects which have developed during these past fifteen months, this law has nevertheless served a good purpose in many respects and they are desirous of having it continued providing congress does not eliminate all of the features which business has found helpful in the stabilization of industry.

Paper merchants must, and do, recognize that in many respects our industry has been benefitted materially as a result of the operation under the Code of Fair Competition, not only from the standpoint of better net results in dollars and cents but also through improved cooperative policies and mutual confidence that has been built up. It has very decidedly elevated the standards of practice and ethics followed throughout the trade.

During the year 1934 the paper merchants learned considerable about the shortcomings of some of their old methods with the result that some very decided improvements have been made in merchandising through a greater degree of cooperation and increased confidence in one's competitors and the willingness to discuss common problems with others dealing in similar lines. This condition has helped the entire industry, until today far more merchants appreciate their responsibility to compete fairly and to be



O. W. MIELKE

generous in the approach to common problems.

It took just such a jolt as that produced by four years of depression to properly prepare the industry for the new type of thinking contemplated in the N.I.R.A. It was then time to plan for business recovery and when the means were afforded the paper distributing trade made an honest and wholehearted effort to eliminate bad practices, "hit or miss" methods of merchandising, and to substitute in their stead proper trade practices and scientific plans of merchandising, fair alike to merchant, mill and consumer. Prominent among the changes were the recognition of the rights of others in adjoining trading areas and the operation of the open price reporting plan under the Code of Fair Competition of the Paper Distributing Trade.

In further evidence of the improved policies quite generally adopted by merchants during 1934, one needs only to examine some of the available figures covering the paper business during the years of 1933 and 1934, which speak for themselves.

While the newly accepted methods cannot lay claim to the increased sales volume of 1934 over 1933, that result obviously being due to the generally improved conditions throughout the nation in all lines, it can be demonstrated that the net result has shown a greater improvement than that of the gross sales and this must be attributed to a better and more business-like selling program.

The figures show that the gross sales for 1934 were 12.1 per cent over those of 1933. Out of the total number of firms reporting their figures for these two years it appears that 528 operated at a loss in 1933, while of this same total only 284 operated at a loss during 1934, with shorter hours and increased salaries in effect. Surely this is striking evidence of real improvement, which it must be apparent is largely due to the fact that the merchants generally have learned to more properly and effectively conduct the important business of paper distribution throughout the nation.

BLAKE, MOFFITT & TOWNE CELEBRATE ANNIVERSARY

Blake, Moffitt & Towne, Pacific Coast paper merchants, are this year celebrating their 80th anniversary.

Through the organization's fourteen branches customers are being told of Blake, Moffitt & Towne's appreciation of their business by means of an attractively printed folder which says:

"With a full measure of sincere appreciation to our many friends and customers we pause to honor the occasion of our 80th anniversary.

"Without such friends and without the support of such splendid paper mills as we are privileged to represent, this anniversary could never have been reached. Our pride in the past is not a complacent one, but serves as an inspiration for the future—a renewed determination to carry on the traditions established by our founders four-fifths of a century ago."

PAPER TRADE MEMBERS HOLD 18th MEETING AT DEL MONTE

Favor Code Continuance—Elect Carl H. Fricke, President;
G. O. Rogers, Vice-President, of Pacific States
Paper Trade Association

"Where do we go from here?" was the predominating theme question at this month's eighteenth annual convention of the Pacific States Paper Trade Association—a question stirred up by indications from Washington that the N.R.A. program might be abandoned.

And the answer was voiced unanimously by the membership in determining to go on as if there were no question of continuation of the Code of Fair Competition for the Paper Distributing Trade and in expressing the hope that the National Administration will grant an extension of the code with all its features intact.

While discussion of the code continuance was outstanding, there were many other matters taken up by the convention, which had an unusually helpful program of talks, papers and discussions on trade practices, mill relations and other subjects of pertinent interest to the jobbers.

Code Working Well on Coast

Charles H. Beckwith, San Francisco, president of the association, handed the gavel and, in his annual report, declared the code of fair competition had operated very successfully in the paper trade on the coast and that its operations had further cemented the membership of the trade body and had enlarged the latter's scope and activities.

At the final session of the convention, the membership chose, as the 1935-36 president, Carl H. Fricke, Los Angeles. Thomas A. O'Keefe, San Francisco, the retiring executive first vice-president, was in direct line for the presidency, but declined the post and the nominating committee, composed of J. W. Thompson, Mason B. Olmsted and Charles Pritchard, chose Mr. Fricke and he was elected unanimously. Mr. Fricke served as vice-president last term. He is a member of the firm of Taverner & Fricke, paper jobbers of the southern city.

G. O. Rogers of the Spokane Paper & Stationery Co., Spokane, Wash., was elected executive first



CARL H. FRICKE
President
Pacific States Paper Trade Assn.

vice-president, putting him in line for the presidency next year.

Regional Vice-Presidents

Regional vice-presidents were named as follows: E. E. Embree, Carter, Rice & Co., Corp., Seattle; W. W. Huelat, Blake, Moffitt & Towne, Los Angeles; E. R. McQuaid, Pacific Coast Paper Co., San Francisco; Vernon C. Scott, Packer-Scott Co., Portland, and A. P. Spitko, Carpenter Paper Co. of Utah, Salt Lake City. H. Arthur Dunn, San Francisco, was named again as secretary-treasurer.

This year's convention was held at Del Monte, Calif., May 9 and 10 and it was decided to hold the 1936 meeting at the same place but a week later, May 15 and 16, in order not to conflict with other conventions held in May there. The paper trade convention has been held yearly at Del Monte ever since the association was formed.

Three New Association Members

Three new members were elected this year: Consumers' Paper Corp., Pocatello, Idaho; Fred H. French Paper Co., Los Angeles, and Long Beach Paper & Notion Co., Long Beach, Calif.

Adopt Memorials

The necrology committee, consisting of Frank C. Stratford, J. W. Murphy and G. O. Rogers, introduced a resolution expressing sympathy to the members of the families of three well-known paper men who died recently. They were Marvin R. Higgins, Crown-Zellerbach Corp., San Francisco; Thomas H. Doane, Doane Paper Co., San Francisco, and Martin Cantine, Martin Cantine Co., Saugerties, N. Y.

The convention was honored by the presence of the president of the National Paper Trade Association—Harold L. Zellerbach, San Francisco, the first coast man ever chosen for the national post. Mr. Zellerbach is a former president of the Pacific States Association and is at present chairman of both the national code authority for the paper distributing trade and the Pacific States regional code committee.

The only open meeting of the convention—the joint session of merchants and manufacturers—was held on the evening of May 9th and it was very well attended by jobbers, mill men and guests, and the open discussion led to many subjects of interest to paper men. President Beckwith presided.

Howarth Optimistic

William Howarth, president of the Everett Pulp & Paper Co., Everett, Wash., said that the paper industry had made strides toward recovery in 1934 with the help of the codes. "We are here to help each other," Mr. Howarth declared, "and we are helping each other, but we would get farther if we had more confidence in each other. In 1933 many paper mills were in the red but many of them got in the black in 1934. Conditions are much better than two years ago." Mr. Howarth said the worst competition came from the man who didn't know costs.

Howard Attends

Ward R. Howard, vice-president and general manager of The Howard Paper Co. of Urbana, Ohio, a guest at the meeting, said he thought the Pacific states convention one of

the greatest gatherings of paper men held each year. The codes have done a great deal to help business, he added.

Mr. Howard and George Olmsted, Jr., of the S. D. Warren Co. of Boston, Mass., were the only eastern mill men present at Del Monte and Mr. Olmsted, speaking at the merchants' and manufacturers' meeting, took a different view of the codes and said the majority of book paper manufacturers felt the NRA had done little but to raise costs. Mr. Olmsted said he felt industry should more or less forget the NRA, revive trade association rules and substitute gentlemen's agreements for laws and codes.

F. R. Philbrook, Graham Paper Co., head of a new Los Angeles association of mill men, said the only way to progress was through cooperation. Allan Field of the Field-Ernst Envelope Co., San Francisco, declared the envelope manufacturers always had worked closely and their cooperation was voluntary. James Fairchild of the Pacific Coast Envelope Co., San Francisco, spoke briefly in the absence of Geo. R. Davis, manager, and confirmed Mr. Field's statement that the envelope manufacturers cooperated wholeheartedly.

Plan Coarse Paper Association

John H. Smith of the Hawley Pulp & Paper Co., of Oregon City, announced there were a movement on foot among the coarse paper manufacturers of the coast to form an association and employ a secretary to be located in San Francisco. C. J. Allair, San Francisco representative of the A. P. W. Paper Co., had the meeting in laughter in relating incidents in connection with his work of selling eastern papers on the coast. Mr. Allair declared there must be teeth in agreements.

Harold Zellerbach, the national president, was introduced by President Beckwith as a member of the Pacific States Association who had brought distinction to the coast. Mr. Zellerbach, in his talk, declared that codes simply superimposed laws on business and said the paper distributing code had worked so well on the coast because of the activity of the coast association's work over the years in training its members along cooperative lines. Mr. Zellerbach urged his listeners not to think too harshly of the codes but declared President Roosevelt's allowance of a 15 per cent price tolerance was the death knell of the NRA.

Harold Zellerbach Talks

Mr. Zellerbach pointed out that the paper jobbing industry is a service industry and that 60 per cent of its income goes out in wages, while but 25 per cent of the paper mill revenue goes for help. He discussed relationships between mills and merchants and said he was glad the coast mills were to have an organization. Mr. Zellerbach said also that his talk was to be his swan song as an officer of any paper association, for he felt he had served his time in both the coast and the national bodies.

Victor E. Hecht, Zellerbach Paper Co., San Francisco, paid a warm tribute to the memory of the late M. R. Higgins, who served as president of the coast association for three years, who was one of its founders and who had the love and respect of everybody in the paper business throughout the nation.

W. J. McCormick, San Francisco representative of the American Writing Paper Co., expressed the regret of his company's president, Sidney L. Willson, at being unable to attend the Del Monte meeting. Mr. Willson has missed few of these coast gatherings.

Embree Reports

The convention sessions opened on the morning of May 9 and one of the first reports was that of E. E. Embree, chairman of the standardization committee, who said some of the coast markets reported splendid progress in reducing the number of items carried. There is work ahead, he said, in the task of cutting down unnecessary lines in order to eliminate slow-moving and frozen merchandise. All sections are working toward this better standardization.

F. E. Jeffries, chairman of the committee on tissues and allied products, said the manufacturers of toilet papers have engaged an official engineer to make a survey of their industry to: (1) Find further outlets for interfolded toilet tissue; (2) Consider advertising as a means of increasing sales of their products; (3) Consult the trade relative to their ideas for sales promotion; (4) Improve quality and packaging, and (5) Consider the best means of merchandising their goods.

The twine committee, J. W. Thompson, chairman, stressed, in its report, the need for simplification and standardization to bring twine merchandising to an equal basis for quality.

W. D. McWaters, chairman of the credit committee, reported that all

coast trading areas were handling their credit terms satisfactory.

Following are those who registered at Del Monte:

Merchants

LOS ANGELES: W. W. Huelat and R. R. Whiteman of Blake, Moffitt & Towne. W. E. Taverner, Carl H. Fricke and W. E. Le Grant of Taverner & Fricke. Mason B. Olmsted and J. Y. Baruh of Zellerbach Paper Co. Oliver E. French of Fred H. French Paper Co.

LONG BEACH: W. C. Fricke of Long Beach Paper & Notion Co.

OAKLAND: J. C. Ady of Zellerbach Paper Co.

PORTLAND: C. L. Shorno of Blake, Moffitt & Towne. James W. Murphy of Carter, Rice & Co. Corp. Vernon C. Scott of Packer-Scott Company. W. D. McWaters of Zellerbach Paper Co.

SALT LAKE CITY: A. P. Spitko of Carpenter Paper Co. of Utah. W. G. Lambert of Zellerbach Paper Co.

SAN FRANCISCO: O. W. Mielke and Arthur W. Towne of Blake, Moffitt & Towne. Charles Pritchard of Bonestell & Co. C. H. Beckwith of Carter, Rice & Co. Corp. T. A. O'Keefe of Pacific Coast Paper Co. H. L. Zellerbach, I. Zellerbach, E. A. Breyman, Victor E. Hecht and F. C. Stratford of Zellerbach Paper Co.

SEATTLE: J. W. Thomson of Blake, Moffitt & Towne. E. E. Embree of Carter, Rice & Co. A. W. Akers of Zellerbach Paper Co.

SPOKANE: G. O. Rogers of Spokane Paper & Stationery Co.

TACOMA: F. E. Jeffries of Tacoma Paper & Stationery Co.

SECRETARIES: W. B. Reynolds, Los Angeles. H. Arthur Dunn, San Francisco. Wm. Paul Uhlman, Seattle.

Visitors—Non-Members

HONOLULU: Stanley Taylor of Honolulu Paper Co. and W. J. Warner of Patton Co., Ltd.

LOS ANGELES: Gordon Jenkins of Gordon Jenkins Co. Lew Gronich of Dependable Paper Co.

SAN FRANCISCO: William Rothschild of Atlas Paper Co. Marcus Alter of Commercial Paper Corp. R. J. Elkus of Elkus Paper Co. S. L. Brilliant of Haas Bros.

Manufacturers

Chris J. Allair, San Francisco, A. P. W. Paper Co. W. D. Brooks, San Francisco, American Paper Goods Co. W. J. McCormick, San Francisco, American Writing Paper Co. J. B. Jones, Los Angeles, Beckett Paper Co. N. L. Brinker, Los Angeles, The Sorg Paper Co. Earl Van Pool and L. G. Older, San Francisco, Brown Company. K. R. Atwater, San Francisco, Columbian Rope Co. Frank N. Gladden, Los Angeles, Continental Paper & Bag Corp. G. J. Ticoulat and R. A. McDonald, San Francisco, Crown Willamette Paper Co. Howard R. Ruweler, San Francisco, and Charles Spies, Los Angeles, Cupples Co. Andrew H. Cochran, San Francisco, Dill & Collins, Inc. William Howarth, J. L. Murray, Everett; J. T. Pope, San Francisco and A. A. Ernst, Los Angeles, Everett Pulp & Paper Co. Allan Field, Field-Ernst Envelope Co., San Francisco. W. H. Thomas, San Francisco, Fibreboard Products, Inc. C. E. Swick, San Francisco, and F. R. Philbrook, Los Angeles,

Graham Paper Co. John H. Smith, Oregon City, Hawley Pulp & Paper Co. Ward R. Howard, Urbana, Ohio, Howard Paper Co. S. R. Whiting, Los Angeles, Inland Empire Paper Co. B. P. Jagard, San Francisco, Hammermill Paper Corp. Augustus Johnson, San Francisco, mill representative. R. F. Attridge, Los Angeles, Johnson-Carvell & Murphy. Charles Merchant, San Francisco, Johnson-Locke Mercantile Co. C. A. Buskirk, San Francisco, Kalamazoo Vegetable Parchment Co. C. Francis Jenkins, Los Angeles, Kimberly-Clark Co. V. N. Savale, San Francisco, Geo. La Monte & Son. H. L. Wollenberg, San Francisco, Longview Fibre Co. J. E. Nail, San Francisco, Oregon Pulp & Paper Co. James F. Niels, San Francisco, and N. B. Sinclair, Los Angeles, Nashua Gummed & Coated Paper Co. C. P. Sheldon, San Francisco, Northwest Paper Co. George R. Davis and James Fairchild, San Francisco, Pacific Coast Envelope Co. W. J. Gray, San Francisco, The Paterson Parchment Paper Co. R. H. Scanlon, San Francisco, Powell River Co., Ltd. William S. Lee, Los Angeles, Sealright Pacific, Ltd. T. C. Macormack, San Francisco, Strathmore Paper Co.

George Olmsted, Jr., Boston, Mass., S. D. Warren Co. Andrew Christ, Jr., Oakland, and G. C. Wieman, Los Angeles, Western Waxed Paper Co. J. F. Wuenschel, Hoquiam, Grays Harbor Corporation and Hammermill Paper Co. William Shattuck, San Francisco, Bemis Gummed Tape Corp. Sam M. Hawkins, San Francisco, PACIFIC PULP & PAPER INDUSTRY.

Convention Notes

A ship-to-shore conversation was held during the convention between William Howarth, president of the Everett Pulp and Paper Co., from his room at Del Monte, with William Pilz, his son-in-law and general manager of the company, while the latter was on the giant liner "Empress of Britain", 400 miles south of Los Angeles. Mr. Pilz and his wife recently left San Francisco on a cruise to England. Mr. Howarth says the conversation was as clear as if the two had been talking

by telephone from different parts of Everett.

Andrew H. Cochran returned recently to his San Francisco office from an eastern trip, on which he visited the mill he represents, Dill & Collins, Inc., Philadelphia.

W. C. Fricke of the Long Beach Paper & Notion Co., one of the new members of the Pacific States Paper Trade Association, is a brother of Carl H. Fricke, the new president. Mr. Fricke and R. E. Banks of the Long Beach Company went to Del Monte as visitors to the convention and left as members of the association. So did Oliver E. French of the Fred H. French Paper Co., Los Angeles.

R. H. Scanlon, San Francisco, Powell River Co., Ltd., reported at the Del Monte convention that he had just been flattered by receiving a \$5.00 chain wire.

ALLAIR AGAIN WINS CONVENTION GOLF TOURNAMENT

Chris Allair, San Francisco representative of the A. P. W. Paper Co., proved as good a golfer as he is an orator when he successfully defended his championship title at the Pacific Coast paper manufacturers' seventeenth annual golf tournament held in connection with the Pacific States Paper Trade Association convention at Del Monte this month.

Allair won the tournament in 1934 and repeated this year, taking home the beautiful silver water pitcher donated as a prize by the trade organization.

Honors in the gentlemen's Class A went to William L. Shattuck of the Bemis Gummed Tape Corporation of San Francisco and also the silver flower bowl donated by the Everett Pulp & Paper Company. Runner-up was G. J. Ticoulet, Crown Willamette Paper Co., San Francisco, who won the cocktail bucket donated by the Graham Paper Co.

Frank Jeffries of the Tacoma Paper & Stationery Co., won Class B and the cocktail set given by the Western Waxed Paper Co. W. G. Lambert of the Zellerbach Paper Co., Salt Lake division, won the runner-up's prize—the toilet set donated by the Crown Willamette.

Other results in the gentlemen's tourney follow:

Blind Bogey—Electric clock, donated by the Pacific Coast Envelope Co., won by F. R. Philbrook, Graham Paper Co., Los Angeles. Runner-up prize, ice bucket and tongs, donated by the Fitchburg Paper Co., won by W. J. McCormick, American Writing Paper Co., San Francisco. This was a three-way tie, in which Messrs. McCormick and Philbrook won from Walter Huelet, Blake, Moffitt & Towne, Los Angeles, in a putting contest on the floor of the banquet hall when the golf dinner was held Saturday night.

Best Net for 18 Holes—Electric clock and calendar donated by the American Writing Paper Co., won by A. W. Sides of the Pioneer Flintkote Co., Los Angeles. Runner-up prize, desk clock, from Geo. La Monte & Son, won by William Taverner of Taverner & Fricke, Los Angeles.

Gentlemen's Approach and Putting Contest—Tray and glasses, donated by the Inland Empire Paper Co., won by W. D. McWaters, Zellerbach Paper Co., Portland. Runner-up prize, silver fruit dish, won by Earl Van Pool of the Brown Co., San Francisco, after putting off a six-way tie at the hall with R. A. McDonald, Crown Willamette Paper Co., San Francisco; Thomas McLaren, Walter Huelet, Blake,

Moffitt & Towne, San Francisco and Andrew Christ, Jr., Western Waxed Paper Co., Oakland.

Mrs. George J. Ticoulet won the ladies' first prize, a silver cake plate, donated by The Paterson Parchment Paper Co., and Mrs. W. S. Lee won the runner-up prize, a cake platter donated by the Grays Harbor Corporation.

Charges of pulling chain-letter tactics were made when Mrs. Victor Savale and Frank Stratford won the mixed-two ball foursome and their other halves, Victor Savale and Mrs. Stratford were runners-up.

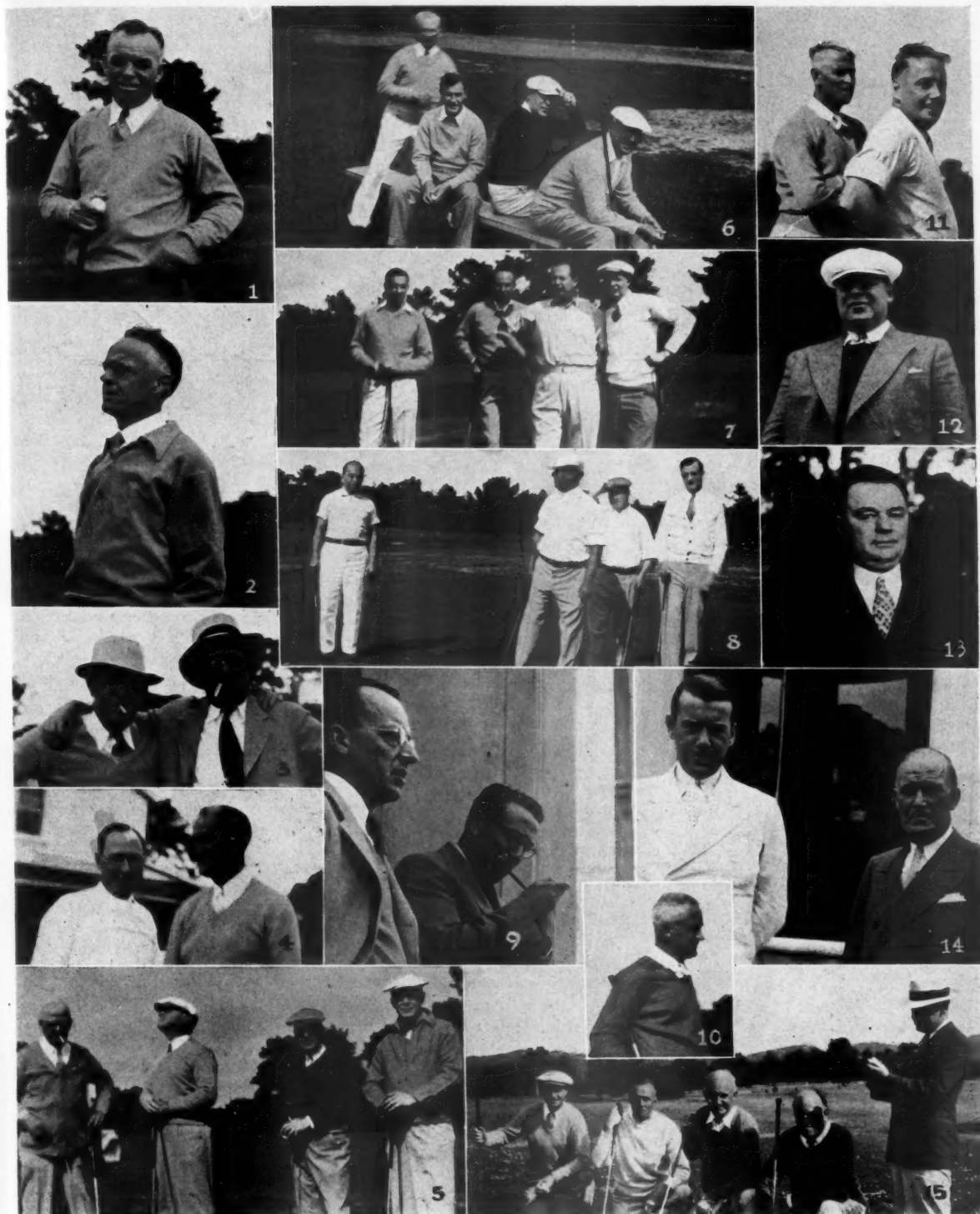
The golf committee was composed of G. J. Ticoulet, chairman; M. M. Baruh, Andrew Christ, Jr., W. J. Gray and Augustus Johnson.

MCGRATH

B. W. McGrath, sales manager of the bag specialties division of the Continental Paper & Bag Co., arrived in Los Angeles April 29 for a week's visit with Frank Gladden, Pacific Coast manager for the company. Mr. McGrath left early in May for San Francisco, Portland, Seattle, Spokane, and other western centers.

MURRAY

J. L. Murray, director of sales promotion for the Everett Pulp & Paper Co., made a hurried trip to Los Angeles April 29, for a conference with E. E. Ernst, Southern California representative. He spent early May in San Francisco, and then attended the Del Monte convention.



AT THE PAPER TRADE MEETING

Snapshots of manufacturers and merchants attending the Pacific States Paper Trade Association's 18th annual meeting at Del Monte, May 9th to 11. 1—Carl H. Fricke, the new president; 2—G. O. Rogers, the new first vice-president; 3—W. D. McCwaters and Augustus Johnson; 4—Earl Van Pool and W. E. Taverner; 5—F. E. Jefferies, Clint Shorno, Ward Howard and J. L. Murray; 6—Andrew Christ, Jr., Frank N. Gladden, John Smith, Charles Pritchard;

7—George Olmsted, Jr., C. Francis Jenkins, Mason B. Olmsted, E. A. Breyman; 8—Victor E. Hecht, E. R. Philbrook, W. J. McCormick, James Fairchild; 9—J. F. Wuenschel, H. L. Wollenberg; 10—L. M. Simpson; 11—Frank C. Stratford; W. J. Gray; 12—John H. Smith; 13—R. H. Scanlon; 14—Ward R. Howard and T. C. Macormack; 15—Arthur W. Towne, W. W. Huelat, L. M. Simpson, A. M. Sides and A. E. Carlson.

COAST BOX INDUSTRY IMPROVING

Paper box manufacturers of the Pacific Coast are keeping in step with the steady progress toward recovery that is being made by their industry throughout the nation. A Dun & Bradstreet statement April 13 says the 1935 trend of production and distribution in the folding, set-up and corrugated box divisions throughout the nation has been upward, with 1934 figures exceeded by 10 to 20 per cent and this improvement can be noted in the industry in the West.

Earnings are averaging better than at any time in the past three years, the statement says, notwithstanding the higher costs and the industry, as a whole, has benefitted from the codes of fair competition which have eliminated many of the abuses which had been retarding progress. The low price level, however, continues one of the chief handicaps to the attainment of better financial conditions, but improvement in this direction already has started.

The employment level has been lifted and in some districts orders booked are sufficient to maintain current schedules or two months or more. The broadest upswing for the

year however, is not expected to develop until the third or fourth quarters.

On the coast, the industry has a strong trade organization, the Pacific Coast Paper Box Manufacturers' Association, the president of which is Willis H. Thomas Fibreboard Products, Inc., San Francisco. Vice-president is C. A. Morgan, F. C. Stettler Mfg. Co., Portland, Ore., and treasurer is Charles Ruble, Standard Paper Box Co., Los Angeles.

The association is divided into two groups, the folding box and the set-up box divisions, each with its own executive committee. The folding committee is composed of Richard Schmidt, Jr., Schmidt Lithograph Co., San Francisco; Payson Thompson, Portland Paper Box Co., Portland, Ore. and Albert E. Stein, Angelus Paper Box Co., Los Angeles, Calif. The set-up committee members are J. W. Scully, Puget Sound Paper Box Co., Seattle, Wash.; William J. O'Donnell, Fleishhacker Paper Box Co., San Francisco and Clarence B. Kerr, Hollywood Paper Box Corp., Hollywood, Calif. Hugh Peat is secretary



WILLIS H. THOMAS
President

of the association and offices are maintained at 112 Market St., San Francisco.

The 1935 convention of the association will be held at Del Monte early in July, the uncertainty of the date being the desire of the box manufacturers to delay their meeting until the attitude of Washington officials regarding the future of the N.R.A. is recorded.

QUEBEC ADOPTS NEWS- PRINT BILL

Premier Taschereau of Quebec has put through his bill giving his government control over the woods operations of the newsprint companies, and in a few days will confer with Premier Mitchell Hepburn of Ontario. Taschereau's plan is to obtain the support of Ottawa so that there may be uniformity in the legislation applying to the newsprint industry in eastern Canada. Obviously, it would be useless to have one form of control in Quebec and another in Ontario, for mills in both provinces are keenly competitive.

This is only one of several developments indicating that the newsprint industry in the east will soon face a showdown. Taschereau's action was originally inspired by refusal of St Lawrence Paper Mills to unite with other producers in maintaining a higher price. This refusal, along with other factors, made it impossible for the industry to enforce the \$42.50 per ton base price as agreed upon early in the year.

Taschereau believed that by controlling woods operations the gov-

ernment could so govern cost of production as to prevent any one company from upsetting any price agreement through independent price-cutting, the curse of the newsprint market for years.

Taschereau's policy has been dictated more by concern over the livelihood of mill workers and the threat of depleted forests than by consideration for the mills. "I have no hesitation in saying that I do not know a group of men in industry so little loyal to one another as the manufacturers of newsprint", said Taschereau recently.

In explaining the purpose of the legislation, Hon. Henri Mercier, Quebec's minister of lands and forests, says the government's aim is to prevent companies from cutting more wood than they need to fill their orders, as well as to prevent them from cutting great quantities to unbalance the market and disturb conditions of labor. The bill gives the government authority to charge as high as \$6 per cord of pulpwood cut. Imposition of such a tariff would effectively prevent a company from competing in the newsprint market.

This rate, of course, would not apply unless the regulations were broken and illusory prices for newsprint were accepted. It is hinted that the government would prefer not to enforce the measure immediately, but hold it as a threat over the industry.

The Quebec pulpwood law is not the only significant development. Rumors indicate that a big merger of Quebec newsprint companies is coming. This would probably involve, Price Bros. & Co., Anglo-Canadian Pulp & Paper, Consolidated Paper, St Lawrence Paper and Lake St John.

WRAPPING PAPER AND BAG MAKERS APPOINT SECRETARY

A new addition to the paper fraternity of the Pacific Coast is P. L. Isler, a former resident of New York City, who is expected to arrive on the Coast in early June. Mr. Isler will set up headquarters in San Francisco to act as a permanent secretary for a group of Pacific Coast manufacturers of wrapping paper and bags.

MUTUAL PULP & PAPER MILLS PLAN TO BUILD AT PRINCE RUPERT

Construction Expected to Start in July —
Will Produce Newsprint and Mitscherlich Pulp
L. A. De Cuere Will Be Engineer

Plans for a pulp and paper mill at Seal Cove, Prince Rupert, B. C., long discussed, are rapidly materializing and actual construction will be commenced by the middle of July, according to F. L. Buckley, head of the organization, who for years has been developing his dream of a modern paper plant for northern British Columbia.

"We will be delivering paper by January, 1937," Mr. Buckley told Pacific Pulp & Paper Industry. "Capacity will be between 150 and 200 tons of newsprint daily, and in addition we plan to produce a large volume of Mitscherlich sulphite pulp for high grade writing paper."

Mr. Buckley said that San Francisco interests were assisting in the financing of the mill, but he declined to identify them at this stage of development. He indicated, however, that financing was no longer an obstacle and that everything seemed to be working out satisfactorily. He is leaving for the east in a few days and will be gone a month. When he returns he will be able to give out additional details concerning the project.

Preliminary preparations, however, are already well advanced. The company has been incorporated at

Victoria under the name of Mutual Pulp & Paper Mills with a capital of 150,000 shares of a maximum value of \$1 each, but Mr. Buckley explained that this was a purely nominal figure for the purpose of incorporation. The name of R. L. Stultz, Vancouver lawyer, appeared on the incorporation papers along with that of Mr. Buckley.

L. A. DeCuere, of Wisconsin Rapids, Wis., well known in pulp and paper circles, has been engaged as engineer and he will supervise construction of mill and installation of machines and equipment. No contracts have yet been awarded, says Mr. Buckley.

Between four and five billion feet of timber, containing a large proportion of good grade spruce pulpwood is controlled by the company, according to Mr. Buckley.

Hydro-electric power will either be purchased from the Northern Electric, which has a power plant in Prince Rupert, or if present negotiations with that end in view fail, the company will establish its own plant, harnessing power from Swartland Lake, near Prince Rupert.

Asked whether he considered that present prices of pulp and newsprint were a discouragement, Mr.

Buckley expressed confidence in the future of the market.

"Prices for newsprint and pulp are low now, but so are construction costs," said Mr. Buckley. "We intend to take advantage of these low costs and by the time we are producing I feel sure that prices will be high enough to insure profitable operation. We will have one of the best locations on the continent, with tidewater site for the mill and direct connection with a transcontinental railroad system — the Canadian National. Also, we will have the advantage of being close to labor supply. All other mills in British Columbia have a comparatively isolated location."

The company has several tentative plans for obtaining a supply of sulphur, but no decision has been reached.

Consolidated Mining & Smelting Company at Trail, B. C., is now building a \$2,500,000 sulphur plant and it may be possible to obtain a supply from there on advantageous terms.

Information from Prince Rupert, B. C. says that the daily capacity of the projected mill will be 150 tons of paper and 30 tons of sulphite pulp.

B. C. PULP MAKES BOND PAYMENTS

B. C. Pulp & Paper Company is still compelled to sell its product in a highly competitive market and the price outlook is still obscure, according to Lawrence Killam, president, in announcing that the company has made the first payment on the general mortgage bonds since May 1, 1932.

Operating profits of \$706,833 were reported for 1934, as compared with only \$404,072 in 1933. The company caught up with arrears of interest on the first mortgage bonds last November.

B. C. Pulp & Paper Company operates two mills producing pulp, one

at Port Alice and another at Wood-fibre.

Unpaid interest on the general mortgage bonds as at December 31, 1934, was \$333,634. In May, 1934, bondholders agreed to deferment of interest due May 1, 1932, to November 1, 1934, inclusive, until May 1, 1934, but made no provision for deferment of the payment due May 1, 1935.

General resumption of payments on the general mortgage bonds does not indicate further improvement in earnings, says Mr. Killam.

During the early months of last year, earnings were better than in the previous year, but the general trend of prices during the latter

part of last year and so far this year has been downward, reports Mr. Killam. There has been a cut of \$5 per ton on one type of product this year and of \$4 on another, and while the company has been maintaining its position in the Orient, the recent threat of tariff retaliation in Japan has filled the situation with doubt.

CANADA'S PULP EXPORTS

Of Canada's 1934 pulp exports the United States took

95% of the Mechanical Pulp

96% of the Sulphate Pulp

76% of the Bleached Sul-

phite Pulp

58% of the Unbleached Sul-

phite Pulp

Showing principal grades manufactured and capacities in tons per 24-hour day

[illegible]

Totals do not include 250,000 sq. ft. of insulating board.
Total Pacific Canadian Capacity—Pulp, 1,360 tons; Paper, 1,010 tons.
Total Pacific United States Capacity Pulp, 4,362 tons; Paper, 3,743 tons.

Totals do not include 230,000 sq. ft. of insulating board.

SELECTED HANDBOOKS ON THE MANUFACTURE OF PAPER, PULP and 'ALLIED PRODUCTS

A selected list of hand books on the manufacture of paper, pulp and allied products has recently been compiled by the Forest Products Division of the Bureau of Foreign and Domestic Commerce, Department of Commerce.

The list is accompanied by a statement saying that although all the books published on pulp and paper making are not included in the list, an endeavor has been made to include works of interest or value to pulp and paper mill engineers, manufacturers, investigators and students of the industry.

A few of the books are out of print, but probably may be consulted at any of the large public libraries or at commercial libraries. Foreign books may be obtained from booksellers specializing in foreign books. Publications of the Forest Products Laboratory may be obtained by addressing the Director of the Laboratory at Madison, Wisconsin. The list of books and publications follow:

- ANDES, Louis E. Treatment of paper for special purposes. 204 p. 2nd ed. rev. il. \$3.50. 1923. D. Van Nostrand & Co., Inc., New York.
- BEVERIDGE, James. Paper makers' Pocket-Book. 412 p. 3d. ed. rev. \$8. 1925. D. Van Nostrand & Co., Inc., New York.
- BLASWEILER, T. E. Use of sodium silicate for sizing of paper. (Translation by C. F. Cross). 133 p. \$4.00. 1926. D. Van Nostrand & Co., Inc., New York.
- BLEUCHER, Hans. Plastische massen. 1924. S. Hirzel, Leipzig, Germany.
- BROMLEY, Henry A. Paper and its constituents. 232 p. 1920. Spon & Chamberlain, New York. (Out of print.)
- BUTLER, F. O. Story of paper making. (Historical). 1901. J. W. Butler Paper Co., Chicago, Ill. (Out of print.)
- BUXTON, G. F. and CURRAN, F. L. Paper and cardboard construction. 2nd ed. \$1.15. Manual Arts Press, Peoria, Ill.
- BLUM, Andre. Origin of paper. (Trans. from French by H. M. Lydenberg). 64 p. \$2.00. 1933. R. R. Bowker Co., New York.
- CARPENTER, C. H. Atlas of paper-making fibers. 50 cents. 1932. New York State College of Forestry, Syracuse, N. Y.
- CHALMERS, T. W. Paper making and its machinery. 178 p. il. \$8.00. 1920. D. Van Nostrand & Co., Inc., New York.
- CLAPPERTON, George. Practical paper making. 3rd. ed. rev. il. \$3.00. 1926. D. Van Nostrand & Co., Inc., New York.
- CLAPPERTON, R. H. and Henderson W. Modern paper making. 365 p. 1929. Ernest Benn, Ltd., London.
- CROSS, C. F. and BEVAN, E. J. Text book on paper making. 527 p. 5th ed. il. \$9.00. Spon & Chamberlain, New York.
- CROSS, C. F., Bevan, E. J. and SINDALL, R. W. Wood pulp and its uses. 2d. ed. il. \$3.50. D. Van Nostrand & Co., Inc., New York.

- DAWE, E. A. Paper and its uses. 3d. ed. 2 V. \$3.75. 1930. Industrial Book Co., New York.
- DICKINSON, G. English papier-mache; its origin, development and decline. 135 p. 1925. Courier Press, London.
- DOREE, C. Methods of cellulose chemistry. \$7.00. 1933. D. Van Nostrand & Co., Inc., New York.
- DRAUTZ, C. Paper box making. 400 pp., 580 illus. Carl Hoffman G.m.b.H. Berlin.
- ELLIS, E. T. Paperboard packet and box manufacture. 1931. C. Crosby Lockwood & Son, London.
- GRIFIN, R. B. and LITTLE, A. D. Chemistry of paper making. 1894. G. E. Stechert & Co., New York. (Out of print.)
- HEUSER, E. Textbook of cellulose chemistry. \$2.50. McGraw-Hill Book Co., Inc., New York.
- HUBBARD, Ernest. Utilization of wood waste. (Trans. from German by H. B. Stocks). 3d. Eng. ed. rev. & enl. il. \$4.50. D. Van Nostrand & Co., Inc., New York.
- HUNTER, Dard. Primitive paper-making. ltd. ed. portfolio. \$75. 1927. The Author, Mountain House, Chillicothe, Ohio.
- ... Old paper-making in China and Japan. ltd. ed. \$75. 1932. The Author, Mountain House, Chillicothe, Ohio.
- ... Paper-making in the classroom (juvenile). \$1.35. 1931. Manual Arts Press, Peoria, Illinois.
- ... Paper-making through eighteen centuries. 2 vol. \$17.50. 1930. W. E. Rudge, New York.
- JOHANS, G. A. Paper testing and chemistry for printers. il. \$3.75. Pitman Publishing Co., New York.
- KELOGG, R. S. Pulpwood and wood pulp in North America. 273 p. \$4.00. 1923. McGraw-Hill Book Co., Inc., New York.
- LEICESTER, Sheldon. Practical studies for paper manufacturers. 363 p. il. \$12.00. 1924. J. B. Lippincott & Co., Philadelphia.
- MADDOX, Harry A. Paper, its history, sources and manufacture. 4th ed. \$1. 1933. Pitman Publishing Corp., New York.
- McCLELLAND, N. V. Historic wall paper. ltd. ed. de luxe. 1930. J. B. Lippincott Co., Chicago and Philadelphia.
- McCLELLAND, Nancy. Wall papers, old and new. pa. free. 1928. Nancy McClelland, Inc., New York.
- PAULI, A. Paper toys. 2 v. il. pa. \$1.40 each. 1928-1930. Manual Arts Press, Peoria, Illinois.
- PEACH, G. (ed.). Hand decorated patterned papers for book craft. 1931. Dryad Press, London.
- RAHM, Louis F. Plastic molding. 246 p. il. \$3.00. McGraw-Hill Book Co., Inc., New York.
- RAITT, W. Digestion of grasses and bamboos for paper-making. 116 p. 1931. C. Crosby Lockwood & Son, London.
- RIDEAL, S. Glue and glue testings. 3d. rev. ed. 272 p. il. \$5.00. D. Van Nostrand & Co., Inc., New York.
- SALADE, R. F. How paper boxes are made. 1920. Shears Publishing Co., Lafayette, Ind. (Out of print).
- SCHERER, Robert. Casein: its preparation and utilization. (Trans. from German by H. B. Stocks). 3d. Eng. ed. rev. enl. il. \$3.50. 1921. D. Van Nostrand & Co., Inc., New York.
- SCHWARTZ, E. W. K. and MAUERSBERGER, H. R. (eds.). Rayon and synthetic yarn handbook. \$3.00. 1934. Rayon Publishing Co., New York.
- SHUMWAY, H. I. Story of paper. (Juvenile). \$1.50. 1932. Penn Pub. Co., Philadelphia.
- SINDALL, R. W. Testing of wood pulp. il. \$2.50. D. Van Nostrand & Co., Inc., New York.
- ... Paper technology. 337 p. 3d. ed. rev. \$9.50. 1920. J. B. Lippincott & Co., Philadelphia.
- ... Manufacture of paper. 275 p. il. \$3. 1908. D. Van Nostrand & Co., Inc., New York.
- STEPHENSON, J. N. (ed.). Manufacture of pulp and paper. (Pub. for Technical Ass'n of the Pulp and Paper Industry). 2d. ed. 5 vol. il. \$6.00 each. 1928-29. McGraw-Hill Book Co., Inc., New York.
- STEVENS, Henry P. Paper mill chemist. 2d. rev. ed. il. \$4.00. 1919. D. Van Nostrand & Co., Inc., New York.
- STRACHAN, James. Waste paper, its recovery and re-manufacture. Stonhill & Gillis, Ltd., London. (Out of print.)
- SUTERMEISTER, Edwin. Chemistry of pulp and paper making. 2d rev. ed. \$6.50. 1929. John Wiley & Sons, New York.
- THOMAS, A. W. Colloid chemistry. 512 p. \$4.00. 1934. McGraw-Hill Book Co., Inc., New York.
- THUMMES, Heinrich. Tuten, beutel, und papier sack fabrication. 2 vol. Carl Hoffman, G.m.b.H., Berlin.
- VERSTONE, P. E. Manufacture of paper containers. 223 p. Stonhill & Gillis, Ltd., London.
- UNITED STATES FOREST SERVICE: Forest Products Laboratory. Chemistry of the sulphite process. \$3.00. 1928. Technical Association of the Pulp and Paper Industry, New York.
- WARD, George W. Wall paper, its origin, development and manufacture. il. \$1.00. 1922. Pitman Pub. Corp., New York.
- WEEKS, Lyman H. History of paper manufacturing in the United States, 1690-1916. 352 p. \$3.00. Lockwood Trade Journal Co., Inc., New York.
- WEICHEL, A. Buntpapier-fabrikation. 448 p. 1927. C. Hofman, G.m.b.H., Berlin.
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J. P. WEYERHAEUSER DIES

John Philip Weyerhaeuser died in Tacoma May 16th of pneumonia at the age of 77. He was the son of Frederick Weyerhaeuser founder of the great timber organization.

Mr. Weyerhaeuser was president of the Weyerhaeuser Timber Company from 1916 to 1928.

He is survived by two sons and a daughter, J. Philip Weyerhaeuser, Jr., vice-president of the Weyerhaeuser Timber Company; Frederick K. Weyerhaeuser of St. Paul, president of the Weyerhaeuser Sales Company; and Mrs. F. R. Titcomb of Tacoma, whose husband is general manager of the Weyerhaeuser Timber Company.

Burial was at Rock Island, Illinois.



WARD HOWARD VISITS COAST

Ward R. Howard, vice-president and general manager of The Howard Paper Co., Urbana, Ohio, is a Pacific Coast visitor this spring, one of his objects being to attend the Pacific States Paper Trade Association convention held this month at Del Monte and the other being the further investigation into sites offered for a pulp mill his company is considering establishing in the Pacific Northwest.

Mr. Howard told PACIFIC PULP & PAPER INDUSTRY at Del Monte that his company was giving the pulp mill proposal every consideration, were studying all details and that they were not going to jump into any program without knowing where they were going.

Following his visit to Del Monte, Mr. Howard left for Los Angeles and sailed from there on the liner "Lurline" for Honolulu, to remain a week or more, after which he will return to the mainland and visit Portland, Tacoma, Seattle, Bellingham and Spokane.

The Howard Paper Co. is a converting company and makes no pulp now. In addition to the mill at Urbana, where it makes Howard bond, it also owns The Aetna Paper Co. of Dayton, Ohio, and The Maxwell Paper Co. of Franklin, Ohio. Mr. Ward Howard is vice-president of the Maxwell company.

WANTED: Used dryers in good condition, 48" diameter 130, 132 or 134" wide. Include frames, drives and shaft if possible. Address reply, Box 50, care of Pacific Pulp & Paper Industry, 71 Columbia Street, Seattle, Wash.

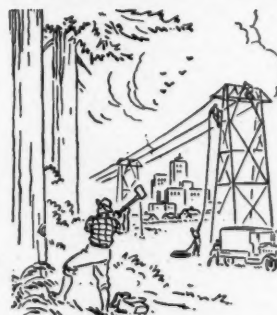
ECONOMIC ESSAY CONTEST

A prize economic essay contest, inaugurated to stimulate careful and persistent study of the economic problems of the Pacific Northwest, has recently been announced by The First National Bank of Portland. Subjects may be chosen by the contestants and it is particularly desired that entries be made dealing with some phase of the pulp and paper industry. One of the suggested subjects is "The Possibilities of Utilizing the Electric Power Being Developed in the Pacific Northwest in the Pulp and Paper Industry."

The contest is divided into two divisions. One is open to anyone, with a first prize of \$750 and a second prize of \$250. The other division is limited to undergraduates in institutions of higher learning in Oregon, Washington and Idaho and the awards may be scholarships or cash as elected by the winners. In making awards the judges will be governed by the evidence of careful and original study and by the contribution made to the better understanding of the problems considered.

Details respecting entry may be obtained from Economic Essay Bureau of The First National Bank of Portland. The contest will close March 1st, 1936.

Dependable Electric Power



Abundant for all of the present industries of Western and Central Washington, and for the new industries that the future will bring.

Consult with us in connection with your power problems

PUGET SOUND POWER & LIGHT COMPANY

Better ELECTRIC SERVICE

PAPER PRODUCTS OF THE PACIFIC COAST INDUSTRY

The Great Diversification of the Western Industry—
Everything From Pulp to Paper Doilies—Is Indicated
in This List of Products Manufactured by Some of the
Leading Pacific Coast Firms

J. E. BERKHEIMER MFG. CO. Tacoma, Wash. Products

Saturating Felt
Building Paper
Deadening Felt
Chip and Straw Board

BARTRAM PAPER PRODUCTS CO., LTD. Products

Bag Specialties
Candy Bags
Coffee Bags
Garment Containers
Glassine Bags
Greaseproof Specialties
Laundry Bags
Millinery Bags
Shopping Bags
Notion Bags

BRITISH COLUMBIA PULP & PAPER CO., LTD. Port Alice and Woodfibre, B. C. Products

Bleached, Easy Bleaching and Strong
Sulphite Pulp

CALIFORNIA CONTAINER CO. Emeryville, Calif. Products

Kraft Corrugated Fibre Shipping
Containers—
A-flute and B-flute
Single-faced, double-faced corruga-
tion, and double walled

COLUMBIA RIVER PAPER MILLS Vancouver, Wash. Products

Wrappings—
All grades sulphite and ground wood
Newsprint
Fruit Wraps—
Citrus and deciduous, oiled, plain or
printed
Toilet Tissues

CALIFORNIA FRUIT WRAPPING MILLS, INC. Pomona, Calif. Products

Citrus Wraps—
Treated and untreated, printed and
unprinted, one or two colors, basis
weight 10 lbs.
Deciduous Wraps—
Oiled and unoled, printed and un-
printed, copperized, basis weight
12 lbs. and heavier.
Napkins, plain, 10 lbs. and heavier
Department Store Tissue, flat or quire-
folded, 10 lbs. and heavier
Laundry Tissue, flat or quirefolded
Bottle Wraps, printed and unprinted,
basis weight 10 lbs. and heavier

Kraft Raisin Tray Paper, basis weight
35 lbs.
Kraft Wrapping Paper, machine-glazed,
20 lbs. and heavier
Sulphite Wrapping Paper, machine-
glazed, 20 lbs. and heavier

Brands

"Pomona Brand" only

CENTRAL FIBRE PRODUCTS CO. (Formerly Colorado Paper Products Co.) Denver, Colo.

Products

Manila Vat-lined Box Boards
Book Vat-lined
News Vat-lined
Test Liner
Test Chip
Pasted Chip
Container Stocks
Sheathing
White Blanks
Colored Folding Box Boards
Set Up Box Boards
Plain Chip, Rolls and Sheets
Pulp Wall Boards

CROWN WILLAMETTE PAPER COMPANY

Camas, Wash.; West Linn, Ore.;
Lebanon, Ore.

Products

Towels—
Alfibre—Senior, Junior and Midget
(folded)
Alfibre—(Roll)
Kraftspun—Senior, Junior and Mid-
get (folded)
Crown Kraft—Midget (folded)
Radiant—(Roll)

Bakers Bags—
Crown Sulphite Bread Bags
Crown Bleached Satina Sulphite
Bread Bags

Bleached Sulphite Wrapping—
Crown Snowfibre

Butcher Papers—

Crown Alpine Meat Wrap—S. F.
White Full Bleached

Crown Meat Wrap—S. F. Natural
Crest Meat Wrap—S. F. or W. F.
Natural

Crest Butcher Fibre—W. F. Mottled,
Natural

Crest Moistite Butcher—Dry Finish
(Natural), Pink, White

Citrus Tissues — Plain and Printed
Crown Citrus

Colored and Striped M. G. Sulphite
Wrapping—
Crown Damask Alfibre—M. G. wide
stripe

Commercial Wrapping Tissue—
Crown Snowtex Tissue — Full
Bleached White
Crown Velvetex Tissue—Unbleach-
ed-White and Manila
Crestex No. 2 Tissue—Unbleached
White and Manila

Converting Kraft—

Crown Grocery Bag Paper
Crown Envelope Kraft
Crown Gumming Kraft
Crown Asphaltting Kraft
Crown Waxing Kraft

Drawing Manila—

Crown Drawing Manila

Envelope Manila—

Crown Envelope Manila

Excelsior Paper—

Crown Tissue Excelsior

Fruit Papers —Plain and Printed—

Crown Satina Fruit Wrap
Crown Alfibre Fruit Wrap
Crown Bleached Alfibre Fruit Wrap
Crownoil Unbleached Alfibre Fruit
Wrap
Crownoil Unbleached Alfibre Fruit
Wrap
Crown Copperized Alfibre Fruit
Wrap
Crown Tomato Wraps—M. G. or M.
F.—Pink, White or Manila
Crown Cantaloupe Wrap—Treated
Pink or Manila

Grocery Bags—

Crown Kraft—S. O.
Otter, Reliance, Eagle—S. O.
Monarch—Striped M. F. Kraft—
S. O.
Maydwell—Gray Kraft—S. O.
Bee—Unbleached Sulphite—S. O.
Commander Kraft—Sq.
Pure Fibre—(Unbleached Sulphite)
—Sq.

Gummed Tape—

Crown Gummed Tape
Crest Gummed Tape

Ham Wraps—

Crown Ham Wraps

Kraft Wrapping—

Crown XX Kraft Golden Brown,
M. F. Plain
Crown XX Corduroy Kraft, Brown,
M. F. Striped
Crown Kraft—Natural Brown, M.
F. Plain
Crown Kraft—Silvertone Gray, M.
F. Plain
Crown XX Damask Kraft—Golden
Brown, M. G. wide stripe
Crown Damask Kraft — Natural
Brown, M. G. wide stripe
Crown Damask Kraft—Silvertone
Gray, M. G. wide stripe

Manifolding Paper—

Crown Manifolding Tissue



You can COUNT ON DU PONT RED PAPER DYES

for every purpose

DU PONT has a perfect shade of red, in every color, for every method of paper dyeing, with characteristics and technical skill to solve your problem and save

- PONTAMINE* FAST SCARLET 4BS. Good fastness to light and alkali.
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- DU PONT RHODAMINE B Very brilliant pink for bright shades and as a shading red in whites.
- DU PONT CROCEIN SCARLET N EXTRA Very bright and very fast to light for dipping and calender coloring.
- PONTACYL* CARMINE 2G and 2B

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DU PONT DE NEMOURS
Organic Chemicals Division
Wilmington, Delaware

Manila Wrapping—
Crown Manila
Crown Manila (Bakers 20 lb.)
Mill Wrappings—
Crown Mill Wrapper
Napkins—
Embossed, Genuine Crepe, Semi-crepe, Full Bleached Napkins
Fixture and Special-fold Napkins
Package Napkins — Full Bleached and colors

Newsprint—
Standard News (rolls)
Commander News (sheets)
Crown Printers Roll News
Crown Printers Sheet News
Crown Flat-bed Sheet News
Crown Pink, Green and Peach News

Odd Bags—
Crown Merchandise Bags
Crown Notion Bags
Crown Millinery Bags
Crown Garment Bags
Crown Banana Bags
Crown Barrel Bags
Crown Poultry Bags
Crown Sugar Bags
Crown Nail Bags
Crown Confectionery Bags
Crown Laundry Bags
Crown Shopping Bags

Roll Toilet Tissue—
10-Lb. Fourdrinier Tissue—650-750-1000 and 2000 count
10-Lb. Fourdrinier Notched Oval Tissue — 400 count — 7 and 8-oz. rolls
12-Lb. Full Bleached Tissue—1000 count
12-Lb. Unbleached — Semi-crepe — 650 count
13-Lb.-14 Lb. Semi-bleached—Semi-crepe—4-5-6-7 and 8-oz. rolls
Full Bleached Genuine Water Crepe — 6-7-8 oz. rolls

Specialty Bags—Plain and Printed—
Crown Raisin, Prune, Peach and Fig Bags

Raisin Tray—
Crown Sunbeam Raisin Tray

Salesbook Manilas—
Crown Salesbook Manila

Imitation Greaseproof—
Crown XX Sulpar
Crest Parchspun

Sulphite Box Liners—
Crown Water Crepe Box Liners
—Pink, Blue and White

Crown Machine Crepe Box Liners—
Pink, Blue and White

Crown Uncreped Box Liners—Pink, Blue and White

Sulphite Wrapping—
Crown Manila

Crown Alfibre
Crest Alfibre

Tire Wraps—
Crown Tire Wraps

Waxing Sulphite
Crown Opaque Bread Wrap
Crown Bleached Waxing Sulphite

Waxing Tissue—
Crown Snowtex Waxing Tissue
Crestex Waxing Tissue

Waxed Papers—
Crown Waxfibre
Crest Waxfibre

Florist Tissue
Waterproof Paper (Laminated)—
Crown Sealite Kraft

CALIFORNIA-OREGON PAPER MILLS
Los Angeles, Calif.

Products
Wrappings—
Manila, kraft and sulphite

Tissues—
White and colored

Fruit Wraps—
Oiled, plain and printed
Waxing Papers—
Plain and printed
Tire Wraps
Vegetable Parchment
Specialties
Crepe Paper

CERTAIN-TEED PRODUCTS CORP.
Richmond, Calif.

Products
Roofing—
Mineral surfaced shingles
Mineral surfaced roll roofing
Fine surfaced roll roofing
Bricktex siding

Felts and Building Papers—
Asphalt felt, 10, 15 and 30 lb.
Saturated and coated insulating
Asphalt sheathing
Building insulator
Tuf-Tite kraft sheathing
Flax felt
Blue plasterboard, 30 and 60 lb.
Deadening felt, 3/4, 1 and 1 1/2 lb.
Sheathing paper, 20 and 30 lb.

Brands
Shingles—
Speedlay, Sealdon, Universal
Saf-T-Lok, Mul-T-Form

Roll Roofing—
Diamond Point, Super Certainteed
Certain-teed, Guard, Corporal

EVERETT PULP & PAPER CO.
Everett, Wash.

Products
Railroad Writing (O. P. S.), white, amber, blue, pink, green
Penmanship Writing (M Grade), white

No. 4 Opacity, Bond, white, canary, buff, blue, pink, green, goldenrod
Stadium Bond (surface sized), white, canary, buff, blue, pink, green, goldenrod

Anchor Book Laid Mimeo (slack sized), white
Anchor Book Wove Mimeo (sized) white

Laid Mimeo (slacked sized) white
Signwell Mimeo ("152X" hard sized), white wove, blue, pink, canary, buff, green, goldenrod

Machine Finished Book, white, india, yellow, blue, pink, green, orange
Super Book, white, india

Masterpiece Book (25x38 — 50 and heavier), white
Art Book (English finish), white, india

Monastery Text (eggshell), white, india
Anchor Book (M. F.), white
Super Rotogravure, white

Soap Wrapper (alkali proof), white
"Hard-Wear" Catalogue (25x38—40 and heavier), white

Non-Fading Poster, white, orange
No. 1 Offset (tub sized) (25x38—50 and heavier), white

No. 2 Offset (tub sized) (25x38—50 and heavier), white
M. F. Label, white

Super Label, regular, white; tub sized, white
Li-Rite Coil Wire-bound Notebooks
Tablets, Composition Books and Filers

Opaque School Papers
West Trade Commercial Stationery
Federal Reserve Perforated Pads
West Trade Columnar Pads
Adding Machine Paper
("Everett" brand used where not otherwise noted)

FIBREBOARD PRODUCTS, Inc.
Port Angeles, Sumner, Wash.
Los Angeles, Stockton, Antioch, Calif.
Products

Boxboards—
Miscellaneous Boxboards

Paper Cans: Tubes—
Paper Cans
Coffee Cans

Drug Cans
"White-Tite" Cans
Double "White-Tite" Cans

Mailing Tubes
Telescope Mailing Tubes
Screw Top Mailing Cases
Kraft Tuck-end Mailing Tubes
Fluted Ice Cream Dishes

Egg Packing—
6x6 Fillers
Egg Cartons, 3x4 and 2x6
"Cushion - Pak" Egg Cartons, 3x4 and 2x6

Egg Case Flats
Corrugated Products—
Corrugated Rolls
Photo Mailers
"Super-Test" Corrugated Shipping Cases

Milk Cases
Coffee Cases
Beer Cases
Wine Cases
Glass Cases
Miscellaneous Cases
Cereal Cases
Butter Cases
Display Stands

Solid Fibre Products—
"Super-Test" Solid Fibre Shipping Cases
Fruit and Vegetable Cases
Cannery Cases
Dried Fruit Cases
Salmon Cases
"Re-file" Cases
Butter Cases
Miscellaneous Cases
Cereal Cases
Soap Cases
Liquor Cases

Pails—
Food Pails
Ice Cream Pails

Commodity Folding Boxes—
Cake Boxes
Cake Circles
Candy Boxes
Florist Boxes
Clothing Boxes
Laundry Boxes
Hat Boxes
Millinery Boxes
Collar Bands

Fruit Packing—
Liners—Corrugated and Chip
Pads—Corrugated and Indent
Collars
Fig Trays
Fig Partitions
Fruit Baskets
Peach Shims
Orange Shims
Basket Shims
Shims—Plain and Combination
Basket Circles
Tree Bands

GRAYS HARBOR CORPORATION
Hoquiam, Wash.

Products
Sulphite Bonds
Mimeograph
Manila
Writing
Offset
Specialties

GRAYS HARBOR PULP & PAPER CO.
Hoquiam, Wash.

Products

Bleached Sulphite Pulp

HAWLEY PULP & PAPER CO.
Oregon City, Ore.

Products

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Standard shade and blue white
Rolls and sheets, all grades

Poster Paper

Railroad Manila

Drawing Manila—Standard colors

Sulphite Wrapping—

Cheviot in blue, green, orange, red,
brown and gray

Meat wraps in bleached manila and
Cheviot colors

Tailors pattern in black and green

Bakers' Manila

Macaroni Papers

Sulphite Screenings

Corrugated Screenings

Deciduous and Soft Fruit Wrappers

Tissue Paper, bleached and un-
bleached

Cheviot Tissues, blue, green, orange,
red and tan

Cover Paper, ten fast-to-light colors

Towels, interfolds and rolls

Grocery Bags

Kraft Wrapping Paper, No. 1 and
No. 2

INLAND EMPIRE PAPER CO.
Millwood, Wash.

Products

Newsprint—

Rolls and Sheets

White, cream, colors

High Grade News—

Special halftone and magazine
print

Catalogue

Mimeograph News—

Laid and wove

White and six colors

Sub. 16, 20 and 24

Coarse Papers—

Wrappings

Car Linings

Screenings

Ham Wrap

Sheathing

JOHNSON ENVELOPE CO.
San Diego, Calif.

Products

Catalog Envelopes

Expanding Envelopes

File Folders

Filing Envelopes

Mailing Envelopes

Merchandise Envelopes

Photo Mailers

Tag Envelopes

JOHNS-MANVILLE, Inc.
San Francisco

Products

Building Papers—

Asphalt Saturated Felts—Asphalt
Saturated Rag Felt, No. 10, No.
15, and No. 30

Asphalt Saturated Sheathing

Kraft Sheathing

Rosin Sized Sheathing Paper

Deadening Felt— $\frac{3}{4}$ -lb., 1-lb., $1\frac{1}{2}$ -
lb. and 2-lb. per sq. yd.

Blue Plaster Board

Roofing—

Asphalt Roll Roofing Smooth Sur-
faced; light, medium and heavy
weights, with trade names: Serv-
ice, Planet, and Pilot

Slatekote Roll Roofing

Asbestos roll roofing

Composition Shingles—

Slatekote Shingles

Asbestos Paper and Millboard—Flat
Asbestos and Paper in various widths
and weights

Corrugated Asbestos Paper

Flat Sheets in various grades and
thicknesses

Pipe Coverings—

Asbestocel Pipe Covering

Asbesto-Sponge Felted Pipe Cover-
ing

Wool Felt Pipe Covering

LONGVIEW FIBRE COMPANY
Longview, Wash.

Products

Board—

Sulphate Test Liner

Sulphate Corrugating Board

Kraft Boxboard

Paper—

Plain and Watermarked machine-
glazed Kraft Wrapping

Plain and Watermarked machine-
glazed Kraft Bag Papers

Watermarked machine-glazed Soap
Wrappers

Machine-glazed Envelope Kraft Pa-
pers

Machine-glazed and fourdrinier Tire
Wrap

Fourdrinier machine finished Wrap-
ping Papers

Fourdrinier machine finished Butch-
ers' Papers

Fourdrinier machine finished Bag
Papers

Fourdrinier machine finished Cart-
ridge, Power and Shell Papers

BAGS—(Plain or Watermarked, ma-
chine-glazed or machine finished,
printed or unprinted)—

Grocery Bags

Millinery and Notion Bags

Garment Bags

Barrel Bags

Poultry Bags

Nail Bags

Laundry Bags

Shopping Bags

Bread Bags

Sugar Bags

Raisin Bags

Bag Specialties

Containers—

Solid Fibre Shipping Containers

Corrugated Shipping Containers

Folding Boxes—

Clothing Boxes

Laundry Boxes

Cake Boxes

Millinery Boxes

Folding Box Specialties

Waxed Paper Products—

Waxed Papers

Waxed Butter Cube Bags

Waxed Specialties

Asphalted Paper Products—

Duplex Waterproof Kraft Sheathing
Paper

Duplex Waterproof Kraft Car
Liner

Duplex Waterproof Kraft Egg Crate
Liner Bags

Duplex Waterproof Kraft Poultry
Box Liner Bags

Asphalted Specialties

Paper Towels

LOS ANGELES PAPER MFG. CO.
Los Angeles, Calif.

Products

Asphalt Roofing

Composition Shingles

Saturating Felt

Deadening Felt

Red and Gray Duplex Sheathing

Car Linings

Industrial Floorings

Dry Felts

**NATIONAL CARD, MAT & BOARD
COMPANY**

Los Angeles, Calif.

Artists Illustration Board

Backing Board

Embossed Boards

Linen Finish Boards

Calendar and Photo Mount

Card and Mat Board Products

Coated Board

Cover Papers

Display Cases and Easels

Greeting Card Stock

Illustration Boards and Bristol

Paper Board Specialties

Pasted Board

Picture Backing Board

Poster Board and Paper

**NATIONAL PAPER PRODUCTS
COMPANY**

Port Townsend, Wash.

Products

.016 Kraft Liner Board

.030 Kraft Liner Board

.016 to .038 Suit Box Board

Cement Bag Paper

Grocery Bag Paper

Kraft Wrapping Paper

OREGON PULP & PAPER CO.
Salem, Ore.

Products

White and Colored Bond

Writings

Envelope

Ledger

Mimeograph

Glassine, greaseproof—

Bleached and unbleached

Specialties

Manifold

Parchment

OLYMPIC FOREST PRODUCTS CO.
Port Angeles, Wash.

Products

Bleached Sulphite Pulp

**OWENS-ILLINOIS PACIFIC COAST
COMPANY**

San Francisco, Calif.

Products

Corrugated Shipping Cases (1)

Corrugated Fruit Box Pads

Liners and Collars (2)

Brands

(1) OnIzed

(2) No-Bruz

PACIFIC COAST PAPER MILLS
Bellingham, Wash.

Products

Toilet Tissue—

Bleached, Manila and white roll
Interfolded

Napkins—

Printed, colored, embossed

Flat, quarter-fold, eight-fold

Dispenser fold

Towels—

Bleached Kraft

Brands

M. D. Tissue, etc.

**PACIFIC NORTHWEST PAPER
MILLS, Inc.**

Portland, Ore.

Bags—

Garment, Hat, etc.

Safety Paper

PACIFIC STRAW PAPER & BOARD COMPANY

Longview, Wash.

Products

Combination Board
Plain Chip Board
Solid News
News and Manila Lined
Bleached Manilas
Mist Gray and Colored Boards
Container Board
Test Board
White Patent Coated Board
Solid Pulp Board
Egg Case Filler
Tag Boards

PACIFIC WAXED PAPER CO.

Seattle, Wash.

Products

Bread Wrappers, plain and printed
Household Cutter Rolls
Waxed Carton Wrappers
Lettuce and Vegetable Crate Liners
Transparent Cake and Cookie Wrappers
Butcher and Packers Waxed Paper
General Line for Cracker and Biscuit Companies

PAPER SPECIALTY CO.

Portland, Ore.

Products

Can Liners
Cake Plates
Butcher Plates
Liner Specialties
Paper Raincoats
Toilet Seat Covers
Paper Window Shades
Cake Pads

PARAFFINE COMPANIES, INC.

Emeryville, Calif.

Products

Roof Roofing
Building papers
Sheathing papers
Car linings
Mulch papers
Pipe wrappings

Brands

Pabco brand on all

PIONEER-FLINTKOTE COMPANY(Pioneer Paper Co.)
Los Angeles, Calif.

Products

Roofing Division

Rag Roofing—Dry Felt, all weights, 12 to 108 lbs.
Asphalt Yosemite Rock Surfaced Shingles
Asphalt Emulsion
Rosin-sized Sheathing
Blue Plasterboard
K-B Asphalt Sheathing
Insulating Papers
Asphalt Products, Paints, etc.
Mulch Papers
Pipe Wrap Coverings
Car Lining Papers
Duplex Kraft Sheathing
Asphalt Saturated Felt

Box Board Division

Pioneer Super White Patent Coated Box Board
Pioneer Super Manila
Pioneer Super Mist Grey and all colors
Pioneer Super Suit Box Boards
Pioneer Super Poster Card Board
Pioneer Black Ebonkote Board
Pioneer Show Print Board
Pioneer Solid News Board
Pioneer Kraft Board Liners

Pioneer Jute Board Liners

Pioneer Pasted Chip
Pioneer Colored Manila Lined Boards
Pioneer Bleached Manila Lined Boards
Pioneer Book Lined Chipboard
Pioneer News Lined Chipboard
Pioneer Shirt Boards
Pioneer Division Boards
Pioneer Fruit Box Liners
Pioneer Fruit Box Shims
Pioneer Kraft Metal Lath Backing
Pioneer Plaster Board Liner (kraft)

POWELL RIVER CO., LTD.

Powell River, B. C.

Products

News Print

PUGET SOUND PULP & TIMBER COMPANY

Anacortes and Bellingham, Wash.

Products

Unbleached Sulphite Pulp, shredded

RAINIER PULP & PAPER CO.

Shelton, Wash.

Products

Bleached Sulphite Pulp

ST. HELENS PULP & PAPER CO.

St. Helens, Ore.

Products

Bleached and Unbleached Kraft Paper:

Wrapping
Envelope
Gumming
Waxing
Bag
Butchers
Tire Wraps
Fruit and Cantaloupe Wraps
Box Liners
Toweling Tissue

ST. REGIS KRAFT CO.

Tacoma, Wash.

Products

Sulphate Pulp

SCHMIDT LITHOGRAPH CO.

San Francisco, Calif.

Products

Corrugated Shipping Cases
Fruit Box Pads and Liners
Corrugated Advertising Cutouts
Coated Papers for Labels

SIDNEY ROOFING & PAPER CO., LTD.

Victoria, B. C.

Products

Box Board
Test Board
Felts
Building Paper
Roofing

SPAULDING PULP & PAPER CO.

Newberg, Ore.

Products

Unbleached Sulphite Pulp

SOUNDVIEW PULP CO.

Everett, Wash.

Products

Bleached Sulphite Pulp

WASHINGTON PULP & PAPER CORPORATION

Port Angeles, Wash.

Products

Newsprint

WESTERN BOARD PRODUCTS CO.

Salem, Ore.

Products

Specialty Board for—
Binder's Board
Trunk
Suitcase
Furniture
Automobile Board

WESTERN PAPER CONVERTING COMPANY

Salem, Ore.

Products

Adding Machine Rolls
Glassine and Confectionery Bags
Candy Bags
Cellophane Bags and Specialties
Cash Register Rolls
Aluminum Foil, printed
Greaseproof Specialties
School Papers
Wrapping Specialties
Note Books

WESTERN WAXED PAPER CO.

Oakland, Calif., and Portland, Ore.

Products

Waxed Papers—Printed and Plain
Waxed Paper Bags—Printed and Plain
Kleerwrap
Riegelite
Western Opaque
Snowflake Lunch Rolls
Butter Wraps
Bread Wraps
Candy Wraps
Transo
Shredded Waxed Paper
Icepak
Defiance Sheathing Paper
Adsealit Bands
Majonnier Liners
Egg Crate Lining Bags
Gummed Tape
Lettuce Crate Kraft
Bread Wrapping Machines
Plant Covers
Waxfibre
Asparagus Wraps

WESTMINSTER PAPER CO., LTD.

New Westminster, B. C.

Products

Wrapping—
Kraft and Sulphite, 15 to 40 lbs.
Second Sheets—
White and Colored
Vegetable Fruit Wraps—
Plain, oiled, printed
Tissues, all colors
Toilet Tissues—
Plain, creped, glazed
Towels and Napkins
Waxed Paper, plain and printed
Specialties

WEYERHAEUSER TIMBER CO.

Longview, Wash.

Products

Bleached Sulphite Pulp

WHEDON PAPER CONVERTING COMPANY

Los Angeles, Calif.

Products

Cake Circles
Candy Dividers
Discs (paper, parchment, waxed)
Doilies
Lace Paper
Packing Specialties
Wrapping Specialties

STATISTICAL SECTION

World-Wide Statistical Information of the Pulp and Paper Industry

United States and Canada

PACIFIC COAST WOODPULP PRODUCTION—1923-1934

Pacific Coast States and British Columbia
(Tons of 2,000 lbs.)

	1923 Tons	1924 Tons	1925 Tons	1926 Tons	1927 Tons	1928 Tons
Washington	136,943	159,539	161,858	199,164	268,349	349,107
Oregon and California	162,653	149,894	160,736	178,841	200,869	213,407
British Columbia	217,076	216,243	230,733	239,504	296,253	310,961
Total Pacific Coast	516,672	525,676	553,327	637,509	775,471	873,475
	1929 Tons	1930 Tons	1931 Tons	1932 Tons	1933 Tons	1934 [†] Tons
Washington	523,948	566,137	580,016	420,529	583,770	709,748
Oregon and California	256,546	248,952	237,532	187,133	189,332	225,285
British Columbia	304,619	335,429	310,029	259,586	323,431	335,163
Total Pacific Coast	1,085,113	1,150,518	1,127,577	867,248	1,096,533	1,290,198

Source—U. S. figures up to and including 1933, from U. S. Dept. of Commerce, Bureau of Census; B. C. figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

[†] Figures based upon United States Pulp Producers Association total for Oregon and Washington, excepting soda pulp. Addition of soda pulp production and division of products between Oregon and Washington estimated by Pacific Pulp & Paper Industry. No wood pulp production in California.

UNITED STATES WOODPULP PRODUCTION BY REGIONS—1934*

Source—United States Pulp Producers Association
(Tons of 2000 pounds)

Region.	Total All Grades*	Total Sulphite	Bleached Sulphite	Unbleached Sulphite	Total Sulphate	Groundwood
West Coast	919,533	514,737	285,934	228,803	165,747	239,049
New England	841,401	316,415	172,217	144,198	243	524,743
New York and Pennsylvania	384,869	166,924	86,280	80,644	0	217,945
Lake States	769,803	351,587	209,970	141,617	164,769	253,447
South	985,276	56,854	52,211	4,643	910,208	18,214
Totals	3,900,882	1,406,517	806,612	599,905	1,240,967	1,253,398

*Except Soda Pulp. About 15,000 tons of Soda Pulp was produced on the Pacific Coast in 1934. (Editor).

TOTAL UNITED STATES PRODUCTION OF WOODPULP

By Grades—1925-1934*

(Tons of 2000 pounds)

Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	3,962,217	790,510	612,576	409,768	1,612,019	472,647	64,697
1926	4,394,766	911,729	646,466	519,960	1,764,248	496,920	55,463
1927	4,313,403	872,411	680,288	603,253	1,610,409	487,478	59,564
1928	4,510,800	836,751	722,107	774,225	1,610,988	488,641	78,088
1929	4,862,885	848,754	839,953	910,888	1,637,653	520,729	104,908
1930	4,630,308	815,897	751,166	949,513	1,560,221	474,230	79,281
1931	4,409,344	675,859	740,812	1,034,291	1,449,240	374,054	135,088
1932	3,760,267	548,702	596,937	1,028,846	1,203,044	290,703	92,035
1933	4,329,248	543,957	742,662	1,263,222	1,197,553	581,854	
1934	4,281,428	599,905	806,612	1,240,967	1,253,398	294,089	86,457

*Source: 1925-1933 U. S. Bureau of the Census. 1934 United States Pulp Producers Association.

SUMMARY FOR 1934 OF UNITED STATES WOOD PULP PRODUCTION, SHIPMENTS and STOCKS*

As Reported to the Pulp Executive Authority by 172 Mills in the United States¹

Tons of 2,000 lbs, air dry weight

	Production	Used	Shipments		Stocks on Hand	
			Domestic Market	Export	End of Period	Own Use
Total All Grades (Except Soda) 1934 ¹	3,779,860	3,256,206	373,133	117,921	68,118	41,862
Total ² Sulphite	1,384,471	899,428	344,178	114,161	19,497	40,946
Total ³ Bleached Sulphite	806,612	464,984	266,852	55,862	4,898	35,456
Total ⁴ Unbleached Sulphite	577,859	434,444	77,326	58,299	14,599	5,490
Total ⁵ Bleached Sulphate	88,141	86,732	1,422	0	938	0
Total ⁶ Unbleached Sulphate	1,081,511	1,077,416	2,899	0	5,707	292
Total ⁷ Groundwood	1,145,079	1,116,661	21,708	0	41,402	293
Total ⁸ Damaged, Off-Quality and Miscellaneous Grades	80,658	75,969	2,926	3,760	574	331

*Source—United States Pulp Producers Association.

¹ 172 mills whose capacity totals 94% of capacity of the United States.² As reported by 74 sulphite mills whose capacity totals 98% of the sulphite capacity of the United States.³ As reported by 44 bleached sulphite pulp mills whose capacity totals 100% of the bleached sulphite capacity of the U. S.⁴ As reported by 61 unbleached sulphite mills whose capacity totals 98% of the unbleached sulphite capacity of the U. S.⁵ As reported by 9 mills, representing all mills producing bleached sulphate.⁶ As reported by 34 mills whose capacity totals 94% of sulphite capacity of the U. S.⁷ As reported by 99 mills whose capacity totals 92% of groundwood capacity of the U. S.⁸ As reported by 11 mills.

UNITED STATES WOODPULP CAPACITY BY REGIONS—1934

(Tons of 2000 pounds)

Region.	Total All Grades*	Sulphite	Sulphate	Groundwood	Special Grades and Soda
New England	1,490,325	566,525	49,600	874,200	
Active	1,405,230	550,250	31,000	823,980	
Idle	85,095	16,275	18,600	50,220	
New York and Pennsylvania	981,305	344,875	0	636,430	
Active	791,585	318,525		473,060	
Idle	189,720	26,350		163,370	
Lake States	1,363,535	525,140	283,340	555,055	
Active	1,339,665	509,640		546,685	
Idle	23,870	15,500	0	8,370	
West Coast	1,296,265	666,345	238,700	391,220	
Active	1,207,450	636,430	192,200	378,820	
Idle	88,815	29,915	46,500	12,400	
South	1,213,650	93,000	1,088,100	32,550	
Active	1,188,850		1,063,300		
Idle	24,800	0	24,800	0	
Total	7,006,310	2,195,885	1,659,740	2,489,455	661,230
Active	6,522,090	2,107,845	1,569,840	2,255,095	589,310
Idle	484,220	88,040	89,900	234,360	71,920

*Except Soda Pulp.

¹ Sources: Production—Pulp Executive Authority records. Capacity—U. S. Pulp Producers Association's Basic Survey of the Pulp Industry.

ESTIMATED UNITED STATES CONSUMPTION OF WOODPULP

By Grades—1925-1934*

(Tons of 2000 pounds)

Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	5,590,214	1,426,610	921,291	772,079	1,943,111	469,897	57,226
1926	6,095,279	1,603,433	964,952	913,024	2,068,007	495,127	50,736
1927	5,960,915	1,546,349	1,015,172	997,438	1,856,008	485,208	60,740
1928	6,239,814	1,541,817	1,054,512	1,217,573	1,860,187	485,907	79,818
1929	6,696,322	1,612,459	1,192,370	1,358,181	1,911,114	518,533	103,665
1930	6,414,760	1,543,265	1,095,312	1,371,847	1,859,453	474,369	70,514
1931	5,952,741	1,255,770	1,074,334	1,453,501	1,659,804	376,040	133,292
1932	5,194,367	1,094,831	922,381	1,402,954	1,391,509	291,224	91,468
1933	6,189,602	1,225,537	1,153,778	1,821,656	1,407,832	580,799	
1934	5,969,633	1,217,097	1,148,891	1,776,471	1,442,772	301,552	82,850

Consumption: Production plus imports minus exports.

WOOD-PULP PRODUCTION, BY STATES

1931-1932-1933

(Revised)
Source: Department of Commerce.

	Wood pulp produced (tons of 2,000 lbs.)		
	1931	1932	1933
United States	4,409,344	3,760,627	4,293,344
State—			
Louisiana	260,765	289,021	382,983
Maine	889,416	764,834	778,670
Massachusetts	23,785	14,210	12,387
Minnesota	148,369	134,509	154,522
New Hampshire			78,802
New York	466,510	353,867	393,615
Oregon	237,532	187,133	189,332
Pennsylvania	160,023	130,149	123,758
Vermont	25,601	included in 1	
Virginia	223,417	207,660	241,803
Washington	580,016	420,529	583,770
Wisconsin	586,271	476,228	532,610
Other States	657,528	628,804	649,418

*Combined to avoid disclosing, exactly or approximately, the output of individual establishments.

WOOD PULP PRICES IN U. S.

Year—	Domestic Bleached Sulphite	Foreign Bleached Sulphite	Foreign Strong Sulphite	Swedish Kraft	Domestic Bleached Soda
1928	\$80	\$68-\$78	\$48-\$55	\$50-\$55	—
1929	75- 80	68- 77	50- 56	47- 50	—
1930	65- 75	57- 68	42- 56	30- 47	—
1931	45- 65	43- 57	32- 43	28- 31	—
1932	35- 45	35- 43	27- 32	25- 30	—
1933	35- 60	35- 57	27- 43	25- 37	\$40-\$50
1934	55- 60	55-	42-	33- 38	\$50
Monthly price movement, 1934—					
January	\$60	\$55	\$42	\$37-\$38	\$50
February	55	55	42	38- 36	50
March	55	55	42	36- 35	50
April	55	55	42	35- 37	50
May	55	55	42	37	50
June	55	55	42	37- 36	50
July	55	55	42	36	50
August	55	55	42	36	50
September	55	55	42	35	50
October	55	55	42	35	50
November	55	55	42	34- 33	50
December	55	55	42	33	50

PULP WOOD CONSUMPTION—1923-1934

Pacific Coast States and British Columbia

	1923 Cords	1924 Cords	1925 Cords	1926 Cords	1927 Cords	1928 Cords
Washington	191,751	230,299	241,150	305,787	455,664	631,657
Oregon and California	205,199	205,968	209,349	232,989	267,233	308,264
British Columbia*	267,000	266,000	284,100	318,500	364,000	383,008
Total Pacific Coast	663,950	702,267	734,599	857,276	1,076,899	1,322,929
	1929 Cords	1930 Cords	1931 Cords	1932 Cords	1933 Cords	1934† Cords
Washington	956,132	1,000,001	1,025,878	688,326	1,094,852	1,334,000
Oregon and California	340,745	351,053	319,876	265,470	241,841	288,000
British Columbia*	352,444	373,397	363,688	304,185	362,508	436,000
Total Pacific Coast	1,649,321	1,724,451	1,709,442	1,257,981	1,699,201	2,058,000

Source—U. S. figures from U. S. Dept. of Commerce, Bureau of Census; B. C. Figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

*British Columbia figures prior to 1928 are not shown separately and are estimated on basis of 1.23 cords of wood consumed per ton of wood pulp produced.

†Estimated.

PACIFIC PULP & PAPER INDUSTRY

UNITED STATES
Paper and Woodpulp Production and Consumption
Consumption of Domestic and Imported Pulpwood and Total Pulpwood Consumption
 Specified Years, 1899-1934

Year—	PAPER		WOODPULP		CONSUMPTION OF PULPWOOD		
	Production (tons)	Consumption (tons)	Production (tons)	Consumption (tons)	Domestic (cords)	Imported (cords)	Total (cords)
1899	2,167,593	2,158,000	1,179,523	1,216,254	1,617,093	369,217	1,986,310
1904	3,106,696	3,049,824	1,921,768	2,091,006	2,477,099	573,618	3,050,717
1909	4,216,708	4,224,000	2,495,523	2,856,593	3,207,633	793,954	4,001,607
1914	5,270,047	5,496,164	2,893,150	3,556,377	3,641,063	829,700	4,470,763
1917	5,919,647	6,255,725	3,509,939	4,148,600	4,706,327	773,748	5,480,075
1918	6,051,523	6,387,066	3,313,861	3,869,746	4,506,276	744,518	5,250,794
1919	6,190,361	6,479,490	3,517,952	4,113,911	4,445,817	1,032,015	5,477,832
1920	7,334,614	7,846,827	3,821,704	4,696,035	5,014,513	1,099,559	6,114,072
1921	5,356,317	6,053,915	2,875,601	3,544,218	3,740,406	816,773	4,557,179
1922	7,017,800	8,007,088	3,521,644	4,756,105	4,498,808	1,050,034	5,548,842
1923	8,029,482	9,339,573	3,788,672	5,149,695	4,636,789	1,236,081	5,872,870
1924			3,723,266	5,216,265	4,720,191	1,047,891	5,768,082
1925	9,182,204	10,590,090	3,962,217	5,590,304	5,005,445	1,088,376	6,093,821
1926			4,394,766	6,096,279	5,489,517	1,276,490	6,766,007
1927	10,002,070	11,915,233	4,313,403	5,960,865	5,526,889	1,224,046	6,750,935
1928	10,403,338	12,447,841	4,510,800	6,239,641	5,750,689	1,409,411	7,160,100
1929	11,140,235	13,347,925	4,862,885	6,704,341	6,411,566	1,233,445	7,645,011
1930	10,169,140	12,314,819	4,630,308	6,463,185	6,089,852	1,105,672	7,195,524
1931	9,381,840	11,403,850	4,409,344	6,005,718	5,896,446	826,320	6,722,766
1932	7,997,872	9,733,764	3,760,267	5,083,446	4,891,424	741,699	5,633,123
1933	9,190,017	10,919,391	4,293,344	6,027,088	5,933,295	628,379	6,561,674
1934	9,186,226		4,281,428	5,969,633	5,943,223	973,978	6,917,201

Source: Bureau of the Census, Federal Trade Commission, United States Forest Service and A. P. & P. A.

Cords: 128 cubic feet.

*Pulpwood requirement is a computed figure which represents the pulpwood required to manufacture the total paper consumption of a year.
 †Not strictly comparable with other data under same head. Refers to wood actually imported during the year, whereas other figures refer to imported wood actually consumed during year.

UNITED STATES
Total Domestic Woodpulp Production, by Grades, From 1899 to 1934
In Tons of 2,000 Lbs.

Year	Total	Groundwood	Sulphite	Soda	Sulphate
1934	4,281,428	1,253,398	1,406,517	294,089	1,240,967
1933	4,293,344	1,197,533	1,306,575	495,930	1,259,351
1932	3,760,267	1,203,044	1,145,639	290,703	1,028,846
1931	4,409,344	1,449,240	1,416,671	460,682	1,034,291
1930	4,630,308	1,560,221	1,567,063	504,443	949,513
1929	4,862,885	1,637,653	1,668,707	561,210	910,888
1928	4,510,800	1,615,689	1,595,951	488,641	780,552
1927	4,313,403	1,618,638	1,588,132	487,478	607,172
1926	4,394,766	1,774,192	1,599,776	496,920	523,878
1925	3,962,217	1,629,689	1,447,191	472,647	412,690
1924	3,723,266	1,643,283	1,336,551	440,697	302,735
1923	3,788,672	1,580,553	1,448,690	445,162	314,267
1922	3,521,644	1,483,787	1,374,319	419,857	243,681
1921	2,875,601	1,267,382	1,166,926	300,533	140,760
1920	3,821,704	1,583,914	1,385,854	463,305	188,651
1919	3,517,952	1,518,829	1,419,829	411,693	120,378
1918	3,313,861	1,364,504	1,456,633	350,362	142,362
1917	3,509,939	1,535,953	1,451,757	437,430	84,799
1916	3,435,001	1,508,139	1,466,402	387,021	73,439
1914	2,893,150	1,293,661	1,151,327	347,928	52,641
1911	2,686,134	•	•	•	•
1910	2,533,976	•	•	•	•
1909	2,495,523	1,179,266	1,017,631	298,626	•
1908	2,118,947	•	•	•	•
1907	2,547,879	•	•	•	•
1904	1,921,768	968,976	756,976	196,770	•
1899	1,179,523	586,374	416,037	177,114	•

‡Includes 48,460 tons of screenings as follows: mechanical, 10,115; chemical, 38,345.

‡Includes 49,068 tons of screenings, as follows: mechanical, 6,611; chemical, 42,457.

*Not reported separately.

†Includes 64,427 tons of screenings, as follows: mechanical, 11,459; chemical, 52,968.

‡Includes data for screenings, as follows: Mechanical, 4,701 tons; sulphite, 37,093; sulphate, 6,327.

‡Includes data for screenings, as follows: Mechanical, 8,229 tons; sulphite, 35,433; sulphate, 3,919.

‡Includes data for screenings as follows: Mechanical, 9,944 tons; sulphite, 41,601; sulphate, 3,918.

‡Includes data for screenings as follows: Mechanical, 17,670 tons; sulphite, 44,105; sulphate, 2,922.

‡Includes data for some screenings.

‡Includes data for screenings as follows: Mechanical, 12,759 tons; sulphite, 37,463; sulphate, 1,784.

‡Includes data for screenings as follows: Mechanical, 12,220 tons; chemical, not shown by process, 35,003.

‡Includes data for screenings as follows: Mechanical, 11,769 tons; chemical, not shown by process, 35,824.

‡Includes 92,035 tons screenings and semi-chemical.

‡Includes 75,000 tons semi-chemical and 25,000 tons screenings.

Source: U. S. Department of Commerce.

1934 figures from United States Pulp Producers Association include 86,457 tons of damaged, off-quality and miscellaneous grades.

UNITED STATES
Wood Pulp Imports—Grade Totals—1899-1921
(In Tons of 2,000 Lbs.)

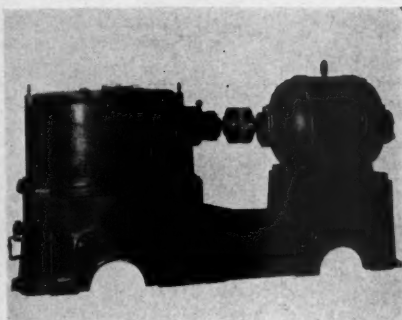
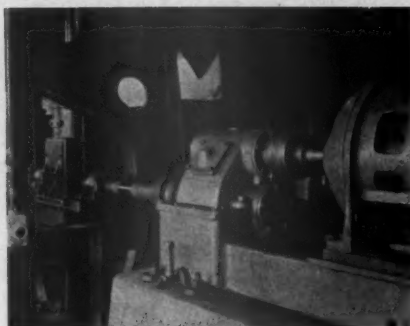
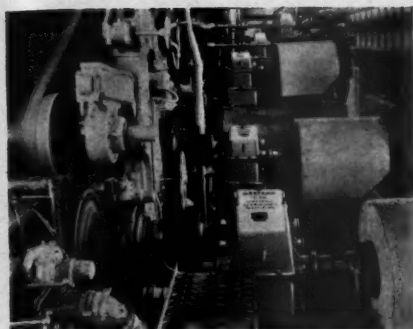
Year	Total	Groundw'd	Total Sulphite	Total Sulphate
1921	697,100	190,744	328,270	178,086
1920	906,297	233,148	473,175	199,974
1919	636,016	202,253	282,707	151,056
1918	578,209	185,478	270,211	122,520
1917	677,841	279,073	289,210	109,558
1916	683,765	262,517	•	•
1915	568,379	174,056	•	•
1914	675,564	217,256	•	•
1913	541,455	167,889	•	•
1912	539,790	185,443	•	•
1911	562,424	262,681	•	•
1910	506,776	224,184	•	•
1909	370,023	145,362	•	•
1908	250,485	71,217	•	•
1907	296,778	•	•	•
1906	199,702	•	•	•
1905	170,867	•	•	•
1904	179,324	•	•	•
1899	57,335	•	•	•

Source: U. S. Department of Commerce.

PULPWOOD IMPORTS
(Unit: 1 Cord—128 Cu. Ft.)

	Rough	Peeled	Rossed	Total
1934	180,019	789,158	4,801	973,978
1933	119,852	591,812	11,544	723,208
1932	114,366	531,158	2,664	648,188
1931	186,613	817,926	17,128	1,021,667
1930	331,158	1,234,678	16,365	1,582,201

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.



A GEAR DRIVE *for* EVERY JOB IN THE PULP AND PAPER MILL

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PACIFIC PULP & PAPER INDUSTRY

UNITED STATES

Pulpwood Consumption and Wood-Pulp Production, by States—1926-1933

Quantity and Cost of Wood Consumed
Quantity of Pulp Produced

Source: Census of Manufactures.

(Statistics are given for all States for which separate figures can be published without disclosing, exactly or approximately, the data reported by individual establishments. Certain of the "Other States," however, are more important in the industry than some of the States shown separately.)

States—	Year	Quantity (cords)	Wood Consumed Cost f.o.b. Mill		Wood Pulp produced (tons of 2,000 lbs.)
			Total	Average per cord	
United States	1933	6,761,674	\$48,360,790	\$7.37	4,293,344
	1932	5,633,123	\$51,769,093	\$9.19	3,760,267
	1931	6,722,766	\$73,524,059	\$10.94	4,409,344
	1930	*7,195,524	88,683,502	12.32	4,630,308
	1929	7,645,011	100,054,139	13.09	4,862,885
	1928	*7,160,100	97,024,190	13.55	4,510,800
	1927	6,750,935	95,452,365	14.29	4,313,403
Individual States:					
Washington	1933	1,094,852	5,345,145	4.88	583,770
	1932	688,326	4,354,452	6.70	420,529
	1931	1,025,878	7,252,770	7.07	580,016
	1930	1,000,001	6,883,484	6.88	566,137
	1929	956,132	6,527,583	6.83	523,948
	1928	651,657	4,781,566	7.34	349,107
	1927	445,664	3,588,506	8.03	268,349
Maine	1933	980,375	10,294,033	10.50	778,670
	1932	948,749	13,000,940	13.70	764,834
	1931	1,122,368	17,326,636	15.38	889,416
	1930	1,203,377	19,833,906	16.48	905,088
	1929	1,311,577	22,281,806	16.99	981,433
	1928	1,309,988	22,602,624	17.25	970,690
	1927	1,273,268	21,850,760	17.16	942,162
Wisconsin	1933	864,779	7,257,686	8.39	532,610
	1932	769,591	7,502,919	9.75	476,228
	1931	956,659	11,319,105	11.83	586,271
	1930	1,168,789	14,710,447	12.59	701,011
	1929	1,233,962	15,632,746	12.67	733,617
	1928	1,225,630	15,869,381	12.95	720,781
	1927	1,199,615	15,174,013	12.65	690,921
Louisiana	1933	584,217	2,295,315	3.93	382,983
	1932	449,151	1,759,642	3.92	289,021
	1931	431,425	2,047,236	4.75	260,765
	1930	422,710	2,385,417	5.64	243,915
	1929	459,553	2,671,881	5.81	246,590
	1928	413,602	2,429,247	5.87	226,708
	1927	349,272	2,056,671	5.89	179,878
New York	1933	478,727	6,379,253	13.32	393,615
	1932	437,640	6,843,337	15.64	353,867
	1931	583,370	10,388,934	17.81	466,510
	1930	763,451	14,200,286	18.60	596,219
	1929	826,312	15,987,105	19.35	662,988
	1928	802,115	14,962,631	18.65	633,182
	1927	872,780	16,882,733	19.34	710,227
Virginia	1933	387,513	2,159,190	5.56	241,803
	1932	357,585	2,613,496	7.75	207,660
	1931	368,030	3,049,937	8.29	223,417
	1930	378,421	3,812,361	10.07	216,365
	1929	375,179	4,143,285	11.04	206,050
	1928	342,813	3,942,477	11.50	189,925
	1927	316,032	3,775,393	11.95	170,630
Michigan	1933	252,295	1,941,931	7.69	153,674
	1932	216,285	1,682,232	7.77	153,323
	1931	251,197	2,937,046	11.69	150,111
	1930	279,986	3,725,080	13.40	193,418
	1929	313,477	4,422,317	14.11	178,015
	1928	331,697	4,634,972	13.97	196,203
	1927	351,688	4,712,584	13.40	193,539
Oregon	1933	241,841	1,453,780	6.01	189,332
	1932	265,470	1,737,597	6.54	187,135
	1931	319,876	2,584,712	8.08	237,532
	1930	351,053	2,963,962	8.44	248,592
	1929	340,745	3,157,499	9.27	256,546
	1928	308,264	3,094,255	10.04	213,407
Minnesota	1933	235,011	1,647,021	6.58	154,522
	1932	211,245	1,825,524	8.64	134,509
	1931	197,587	2,118,058	10.72	148,369
	1930	230,471	2,688,294	11.66	182,456
	1929	266,320	2,780,312	10.44	189,664
	1928	282,691	3,365,081	11.90	194,399
	1927	281,156	3,397,201	12.08	191,220
Pennsylvania	1933	224,076	2,734,374	12.20	123,758
	1932	237,486	3,409,198	14.35	130,149
	1931	292,615	4,662,606	15.93	160,023
	1930	352,775	7,053,253	16.17	188,943
	1929	397,680	6,930,456	17.43	213,083
	1928	405,276	7,016,656	17.31	218,598
	1927	398,021	7,171,606	18.02	216,587
New Hampshire	1933	155,140	1,349,213	8.09	78,802
	1930	242,756	4,527,619	18.65	138,332
	1929	376,014	7,375,455	19.61	212,774
	1928	351,349	6,843,713	19.48	198,587
	1927	358,376	6,958,956	19.42	200,324
Massachusetts	1933	19,599	232,474	11.86	12,387
	1932	20,420	280,579	13.74	14,210
	1931	33,438	535,918	16.03	23,785
Vermont	1933	16,011	227,619	14.21	18,000
	1930	24,633	326,546	13.26	25,601
	1929	24,224	362,784	15.02	25,047
	1928	25,486	447,168	17.55	26,307
	1927	20,081	330,702	16.47	19,831
	1927	31,795	549,741	17.29	32,562

Other States ²	1933	1,027,238	5,043,756	4.91	649,418
	1932	1,024,175	6,759,177	6.60	628,804
	1931	*1,125,690	8,974,555	7.97	657,528
	1930	*734,110	6,116,411	8.33	399,407
	1929	717,474	6,909,782	9.63	402,378
	1928	*663,612	6,176,561	9.31	347,612

*Includes data for small quantity of spent licorice root with no market value.

¹Includes data for a small quantity of spent licorice root of no market value.

²Alabama, Arkansas, Delaware, Florida, Maryland, Mississippi, New Hampshire, New Jersey, North Carolina, Ohio, South Carolina, Tennessee, West Virginia and Vermont.

†1931 and 1932 figures included in other states.

‡1932 figures included in other states.

VALUE AND QUANTITY OF WOOD-PULP
PRODUCTION, BY STATES—1933

Source: Department of Commerce

This table represents statistics for all states for which separate figures can be published without disclosing exactly or approximately, the data reported by individual establishments. Certain of the "other states," however, are more important in the industry than some of the states shown separately.

United States	Wood Pulp Produced	
	Tons (2,000 lbs.)	Value
United States	4,293,344	\$124,556,465
States—		
Wisconsin	532,610	18,959,678
Washington	583,770	18,803,093
Maine	778,670	18,580,679
New York	393,615	12,347,527
Louisiana	382,983	7,833,513
Virginia	241,803	7,404,277
Pennsylvania	123,758	6,181,800
Michigan	153,674	5,281,025
Oregon	189,332	5,040,341
New Hampshire	78,802	4,546,495
Minnesota	154,522	4,467,056
Massachusetts	12,387	513,361
Vermont	18,000	353,822
Other States ¹	649,418	14,243,798

¹Alabama, Arkansas, Delaware, Florida, Maryland, Mississippi, New Jersey, North Carolina, Ohio, South Carolina, Tennessee and West Virginia.

PULPWOOD CONSUMPTION—QUANTITY, BY
STATES—1931-1932-1933

Source: Department of Commerce

This table presents statistics for all States for which separate figures can be published without disclosing, exactly or approximately, the data reported by individual establishments. Certain of the "Other States," however, are more important in the industry than some of the States shown separately.





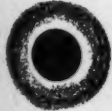
United States	Total quantity consumed		
	1931 (cords)	1932 (cords)	1933 (cords)
United States	6,722,766	5,633,123	6,561,674
States—			
Louisiana	431,425	449,151	584,217
Maine	1,112,368	948,749	980,315
Massachusetts	33,438	20,420	19,599
Michigan	251,197	216,285	252,295
Minnesota	197,587	211,245	235,011
New Hampshire	150,568	included in ¹	155,140
New York	538,370	437,640	478,727
Oregon	319,876	265,470	241,841
Pennsylvania	292,615	237,486	224,076
Vermont	24,633	included in ¹	16,011
Virginia	368,030	337,585	387,513
Washington	1,025,878	688,326	1,094,852
Wisconsin	956,659	796,591	864,779
Other States ¹	975,122	1,024,175	1,027,238

¹Alabama, Arkansas, Delaware, Florida, Maryland, Mississippi, New Jersey, North Carolina, Ohio South Carolina, Tennessee, West Virginia, (New Hampshire and Vermont for 1932.)



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-  Sections Easy to Wash-Up.
-  Open Wire Backing.
-  Vacuum Discharger—Insuring Long Cloth Life.
-  Two Types... Redwood and Cast Iron or Rubber-Covered Metal.

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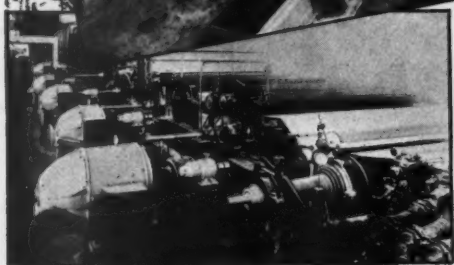
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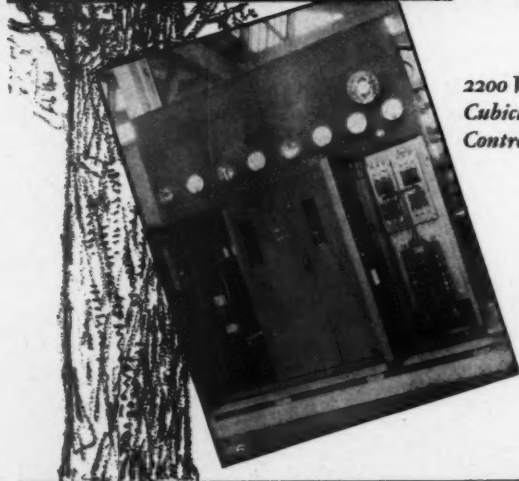
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new economies



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Pump Drive
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Motor*



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WESTINGHOUSE EQUIPMENT FOR THE PULP AND PAPER INDUSTRY

Sectional Paper-
Machine Drives
Log Carriage Drive
Motor and Control
Gear Motors
Switching
Steam Apparatus
Lighting
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Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

WESTINGHOUSE
ELECTRIC & MANUFACTURING COMPANY



PACIFIC PULP & PAPER INDUSTRY

63

CANADA

Wood Pulp Exports

(Tons of 2,000 lbs.)

Year—	Chemical Pulp		Mechanical Pulp		Total, All Pulp	
	Tons	Value	Tons	Value	Net Tons	Value
1934	486,990	\$22,716,942	118,645	\$ 2,727,902	605,635	\$25,444,844
1933	476,358	20,666,614	132,151	2,688,023	608,509	23,354,637
1932	336,063	16,367,976	116,229	2,562,080	452,292	18,930,065
1931	457,435	25,450,476	165,096	4,606,167	622,531	30,056,643
1930	551,413	33,092,807	208,759	5,967,172	760,172	39,059,979
1929	626,378	37,670,383	209,331	5,906,638	835,709	43,577,021
1928	660,136	40,068,703	203,670	5,546,120	863,806	45,614,323
1927	618,324	39,234,577	260,831	7,761,464	879,155	46,996,011
1926	621,004	40,571,304	382,077	11,505,818	1,003,081	52,077,122
1925	599,466	37,358,632	360,265	10,573,273	959,731	47,931,905
1924	528,279	32,326,943	253,699	7,916,029	781,978	40,242,972
1923					875,358	37,027,496
1922					818,246	41,037,849
1921					527,222	33,133,675
1920					819,985	76,563,978
1919					709,134	37,184,764
1918					583,911	33,359,922

BRITISH COLUMBIA

Wood Used in the Manufacture of Pulp

By Kinds and Processes—1933

Kind of Wood—	Average Value		Quantity Wood Used in Each Process		
	Quantity	per cord	Mechanical	Sulphite	Sulphate or Kraft
	Cords	Dollars	Cords	Cords	Cords
Spruce & Balsam	167,373	\$7.01	118,420	45,316	3,637
Hemlock	198,130	5.67	37,861	147,521	12,748
Other Woods	9,945	7.20		1,001	8,944
Total	375,450	\$6.31	156,281	193,838	25,329
Totals, 1932	304,185	\$7.97	144,148	140,364	19,673
Totals, 1931	363,688	\$8.04	144,712	200,859	18,117
Totals, 1930	373,397	\$8.68	142,934	211,106	19,357

Source: Canadian Department of Trade and Commerce, Dominion Bureau of Statistics, Forest Products Branch.

DIVISION OF U. S. PAPER IMPORTS

Nearly 90 per cent of the total paper and board imports into the U. S. in 1934 consisted of newsprint.

Cigarette papers were second with a value of \$44,122,578 and 15,774,318 pounds.

Other paper and board exclusive of newsprint totalled \$10,247,153 in 1934 compared with \$9,399,392 in 1933.

CANADA

PULP PRODUCTION

(Tons of 2,000 lbs.)

	Mechanical Tons	Sulphite Tons	Sulphate Tons	Total Tons
1920	1,090,114	654,273	188,487	1,922,774
1921	931,560	476,929	131,337	1,539,826
1922	1,241,185	678,878	217,862	2,137,925
1923	1,449,106	749,668	224,812	2,413,586
1924	1,427,782	768,035	218,207	2,414,024
1925	1,621,917	842,785	242,207	2,706,909
1926	1,901,268	995,203	256,074	3,152,545
1927	1,922,124	1,016,060	262,512	3,200,696
1928	2,127,699	1,117,227	256,969	3,501,895
1929	2,420,774	1,236,232	250,104	3,907,110
1930	2,283,130	1,076,804	188,253	3,548,187
1931	2,016,480	941,586	143,156	3,103,222
1932	1,696,021	941,579	144,367	2,781,967
1933	1,859,049	937,313	182,988	2,979,350
1934	2,125,000	1,025,000	200,000	3,350,000

BRITISH COLUMBIA

Pulp and Paper Exports

From All British Columbia Ports

(Compiled by Vancouver Merchants' Exchange—Short Tons)

Destination—	1926	1927	1928	1929	1930	1931	1932	1933	1934
Australia	13,950	18,226	14,550	21,480	15,940	11,835	15,314	14,685	26,053
Argentina			34,045		609	*	19,752	28,604	3,985
Central and South America			1,662	14,677	16,503	22,637	6,404	12,693	7,314
Canada (Eastern ports)	41,823			2,130	4,339	4,457	3,820	4,620	24,800
China		80	35	1,870	2,620	489	16,105	26,494	40,062
Japan		53,244	57,230	45,526	54,865	78,631	59,959	100,257	93,212
New Zealand	10,560	8,702	20,548	9,525	9,214	5,363	4,251	4,254	2,845
United Kingdom			1,728	1,728	621	9,047	486	347	6,953
United States	158,917	152,002	172,017	156,788	174,017	157,943	130,771	117,733	128,224
Other Countries		1,980	1,119	277	90	458	731	4,984	11,611
Total Short Tons	235,506	243,671	301,211	254,001	278,818	290,860	257,724†	314,671	345,059

*Argentine shipments in 1931 are included under Central and South America.

†Includes 131 tons of paper shipped from New Westminster, destination not available.

PACIFIC PULP & PAPER INDUSTRY

BRITISH COLUMBIA
Principal Statistics of the Pulp and Paper Industry
1932-1933

	1932	1933
Capital employed	\$51,102,837	\$50,838,480
Total number of employes	No. 2,330	2,417
Salaries and wages	\$ 3,015,228	\$ 2,958,363
Fuel and electricity used	\$ 607,798	\$ 760,786
Power employed	H.P. 133,050	133,048
Pulp-making materials	\$ 2,886,670	\$ 2,981,966
Pulp manufactured	\$ 4,911,874	\$ 5,432,005
Paper-making materials	\$ 3,956,089	\$ 3,718,374
Paper manufactured	\$ 9,636,283	\$ 8,885,395
Gross value of production	\$11,056,236	\$11,098,400
Net value of production	\$ 7,747,143	\$ 7,616,175

Source: Canadian Department of Trade and Commerce, Dominion Bureau of Statistics, Forest Products Branch.

BRITISH COLUMBIA
Principal Production Statistics
1933

	Quantity	Value
Pulpwood produced	cords 395,356	\$2,454,408
Pulpwood consumed	cords 375,450	2,368,363
Wood pulp produced	tons 343,897	5,432,005
Wood pulp consumed	tons 270,039	3,434,288
Paper produced	tons 262,301	8,885,395

PACIFIC COAST STATES
and British Columbia
Paper Production
(Tons 2,000 lbs.)

State—	1931	1932	1933	1934
Washington	374,765	343,222	381,997	418,115
Oregon	200,065	182,789	197,970	220,684
California	192,273	139,297	167,033	169,709
British Columbia	244,397	228,075	260,599	294,183

Total Coast Production 1,011,500 893,383 1,007,599 1,102,691

Bureau of the Census, Dept. of Commerce.

ESTIMATED U. S. PAPER CONSUMPTION—1933
(Tons of 2,000 lbs.)

Total—All Grades	10,622,374
Newsprint	2,759,393
Book	1,022,477
Boards	3,687,989
Wrapping and Bag	1,403,836
Writing	517,015
Cover	16,088
Tissue	459,560
Building	315,392
All Other	440,624

A. P. & P. A. Estimate.

UNITED STATES
Annual Per Capita Consumption of Paper—1919-1933
(In Pounds)

Year	Cultural Papers			Mechanical Papers		Total all Grades
	News	Uncoated Book	Writing	Paper Board	Wrapping and Bag	
1919	35	16	6.2	35	18.3	124
1920	41	19	7.1	42	21.5	144
1921	37	13	4.3	32	15.2	113
1922	45	18	6.3	43	18.7	146
1923	50	19	6.7	50	21.7	167
1924	50	19	7.0	50	21.9	165
1925	51	20	8.2	57	22.4	184
1926	60	20	8.5	62	24.1	198
1927	58	22	8.5	63	25.6	201
1928	59	23	9.0	67	26.7	208
1929	62	24	9.8	73	26.1	221
1930	58	22	9.2	66	25.4	201
1931	52	19	7.3	62	23.0	183
1932	45	16	6.5	52	19.0	156
1933	43.9	16.3	8.2	58.7	22.3	169

A. P. & P. A. Estimates.

BRITISH COLUMBIA
Review of Pulp and Paper Production
1919-1934

	—PULP—		—PAPER—		Other
	Sulphite	Sulphate	Tons Groundwd	News Print	
1934	130,176	15,630	209,359	267,406	26,777
1933	122,265	15,715	185,451	237,107	23,492
1932	85,419	10,889	161,502	205,050	24,871
1931	124,521	11,744	170,432	217,562	17,709
1930	130,462	13,055	172,539	224,928	20,446
1929	112,925	15,647	151,066	201,009	19,492
1928	120,413	15,050	170,005	223,477	15,904
1927	119,005	13,700	165,548	214,010	13,745
1926	108,381	15,000	135,123	178,924	10,389
1925	92,514	16,856	121,363	148,201	9,261
1924	89,839	14,403	112,001	136,281	9,431
1923	99,878	9,932	107,266	142,928	7,709
1922	86,894	9,674	100,759	124,639	7,945
1921	68,502	6,519	89,725	110,176	6,534
1920	92,299	16,380	108,655	136,832	9,792
1919	80,347	9,473	99,769	123,607	7,282

	Total Production All Grades—Tons		Estimated value of production
	Pulp	Paper	
1934	355,165	294,183	\$12,373,000
1933	323,431	260,599	10,825,000
1932	259,586	228,075	11,056,000
1931	310,029	244,397	14,893,000
1930	316,056	245,374	16,520,000
1929	279,638	220,501	14,400,000
1928	305,468	241,437	16,755,000
1927	296,253	227,755	18,505,000
1926	259,504	187,313	16,315,000
1925	230,733	157,462	14,466,000
1924	216,243	145,934	13,938,000
1923	217,076	150,637	15,018,000
1922	197,327	132,584	12,590,000
1921	164,746	117,110	13,508,000
1920	217,334	146,624	
1919	189,589	130,809	

Source—British Columbia, Department of Lands, Report of the Forest Branch.



Photo by U. S. Forest Service

63-Year-Old Western Hemlock in Clatsop County, Oregon. Note the stumps left by early logging operations. 347 trees per acre. Average height 122 feet Average diameter, breast height 13.2 inches.

Can YOU say this?



In some mills today, six cents per ton of paper is considered mighty low lubrication cost! With your equipment it may be impossible to get down that far, but...

*The chances are you CAN
CUT your present lubrication
costs a worthwhile amount*

YOU USUALLY DON'T SUSPECT lubrication when power costs are higher than they should be. And you're not apt to blame lubricants for breakdowns. Or guess that one

kind might outlast another—two or three to one!

Shell engineers know how to uncover just such mysteries as these. They've done it time and again—and helped to make many a plant's profit statement look a little brighter.

Maybe a Shell man can help you. He won't guarantee anything; but he is "raring to see if he can or can't." And his Plant Lubrication Analysis places you under no obligation.

Why not phone, write, or wire the nearest Shell office today?



SHELL MILL LUBRICANTS ENGINEERED TO CUT LUBRICATING COSTS

PACIFIC PULP & PAPER INDUSTRY

UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1934
(Long Tons of 2,240 Lbs.)

Grade—	COUNTRY OF ORIGIN						Total by Grades
	Canada	Finland	Germany	Norway	Sweden	Others	
Mechanical Wood Pulp	139,815	8,126		4,703	15,812	628	169,084
Sulphite—Total	260,287	132,616	81,980	69,407	374,237	40,174	958,601
Unbleached	80,867	112,562	47,319	22,529	314,984	24,856	603,117
Bleached	179,320	20,054	34,661	46,878	59,253	15,318	355,484
Sulphate—Total	77,019	52,367		14,263	332,019	2,460	478,128
Unbleached	46,215	49,627		13,811	317,740	2,460	429,853
Bleached	30,804	2,740		452	14,279		48,275
All Others	6,737		11			54	6,802
Total (By Countries)	483,758	193,109	81,991	88,373	722,068	43,316	1,612,615
Value	\$20,302,452	\$6,734,505	\$3,264,548	\$4,369,160	\$25,624,868	\$1,482,736	\$61,778,269

Source—Import Statistics, U. S. Department of Commerce.

UNITED STATES

Wood Pulp Imports—By Grades and Countries of Origin—1933
(Long Tons of 2,240 lbs.)

Grade—	COUNTRY OF ORIGIN						Totals by Grades
	Canada	Finland	Germany	Norway	Sweden	Others	
Mechanical Wood Pulp	147,742	20,148	150	5,622	13,988	100	187,750
Sulphite—Total	271,291	138,439	76,459	82,900	411,948	62,599	1,043,636
Unbleached	76,537	116,019	43,895	26,597	346,684	33,271	643,003
Bleached	194,754	22,420	32,564	56,303	65,264	29,328	400,633
Sulphate—Total	29,634	49,288	848	16,513	375,583	1,764	473,630
Unbleached	29,634	47,039	848	16,271	366,424	1,764	461,980
Bleached		2,249		242	9,159		11,650
All Other Pulp	28,457		5			266	28,728
Total (By Countries)	477,124	207,875	77,462	105,035	801,519	64,729	1,733,744
Value	\$18,001,772	\$6,453,588	\$2,638,922	\$3,867,528	\$24,096,698	\$2,340,502	\$57,399,010

Source—Import Statistics, U. S. Department of Commerce.

UNITED STATES

Wood Pulp Imports — By Grades and Countries of Origin — 1932
(Long Tons of 2,240 lbs.)

Grade—	COUNTRY OF ORIGIN						Totals by Grades
	Canada	Finland	Germany	Norway	Sweden	Others	
Mechanical Wood Pulp	133,960	16,600		7,664	9,865	183	168,272
Sulphite—Total	206,924	107,287	80,515	78,373	317,629	44,007	834,735
Unbleached	56,335	95,579	42,330	31,402	270,894	19,667	516,207
Bleached	150,589	11,708	38,185	46,971	46,735	24,340	318,528
Sulphate—Total	37,283	45,278	482	13,285	227,226	1,316	324,870
Unbleached	17,411	43,756	482	12,961	225,578	1,316	301,504
Bleached	19,872	1,522		324	1,648		23,366
All Other Pulp	1,569						1,569
Total (By Countries)	379,736	169,165	80,997	99,322	554,720	45,506	1,329,446

Source—Import Statistics, U. S. Department of Commerce.

WHEN... **QUALITY** COUNTS

PAPER MILLS EVERYWHERE

**ARE INSISTING
ON THE**

**HIGH GRADE
BLEACHED
SULPHITE
PULPS**



**MADE BY THREE
MODERN PACIFIC COAST MILLS**

RAINIER PULP & PAPER CO.
SHELTON, WASHINGTON

GRAYS HARBOR PULP & PAPER CO.
HOQUIAM, WASHINGTON

OLYMPIC FOREST PRODUCTS CO.
PORT ANGELES, WASHINGTON

Annual Tonnage Available
in Excess of 125,000 Tons

PACIFIC PULP & PAPER INDUSTRY

U. S. WOOD PULP IMPORTS

Quantity and Value

1922-1934

	Bleached Sulphite		Unbleached Sulphite		Unbleached Sulphate	
	Long Tons	Value	Long Tons	Value	Long Tons	Value
1934	355,484	\$19,415,304	603,117	\$21,791,584	429,853	\$13,733,776
1933	400,633	19,138,468	643,003	19,946,124	461,890	12,568,367
1932	311,046	14,727,214	508,088	17,047,669	310,659	9,818,674
1931	319,518	18,887,719	540,478	23,033,069	344,612	12,035,030
1930	322,886	22,721,929	665,049	33,193,598	357,551	16,452,381
1929	334,235	25,338,603	701,456	35,328,982	384,005	20,518,676
1928	307,771	23,268,421	640,660	32,587,134	381,256	21,170,948
1927	311,130	24,224,626	613,856	23,262,845	341,162	20,684,298
1926	294,818	23,677,929	628,923	37,032,470	334,803	21,193,459
1925	286,976	22,527,879	579,284	31,542,079	306,073	18,257,446
1924	272,370	21,006,429	562,020	30,092,530	277,994	15,904,350
1923	250,580	22,245,868	461,853	26,548,431	233,696	15,228,747
1922	213,093	17,996,401	422,700	22,297,283	275,504	16,083,121
	Total, All Chemical Pulp		Mechanical Pulp		Total, All Grades Wood Pulp	
	Long Tons	Value	Long Tons	Value	Long Tons	Value
1934	1,443,351	\$58,605,219	169,084	\$ 3,245,050	1,612,615	\$61,850,269
1933	1,545,994	54,184,091	187,750	3,214,919	1,733,744	57,399,010
1932	1,154,907	43,652,916	168,272	3,268,457	1,323,179	46,921,373
1931	1,237,600	56,409,638	188,086	4,498,022	1,425,686	60,907,660
1930	1,369,327	74,140,504	267,193	7,146,290	1,636,520	81,286,794
1929	1,441,110	82,840,220	244,162	6,245,776	1,785,272	89,085,996
1928	1,351,005	78,476,280	222,499	5,443,495	1,573,504	83,919,775
1927	1,280,285	80,124,449	219,285	5,961,821	1,499,570	86,086,270
1926	1,278,548	83,208,851	271,213	8,278,220	1,549,761	91,487,071
1925	1,191,875	73,469,063	295,618	8,517,116	1,487,493	81,986,179
1924	1,142,123	68,678,210	219,571	7,190,129	1,361,694	75,868,339
1923	967,869	65,495,800	267,527	9,280,863	1,235,396	74,776,663
1922	931,992	57,600,844	192,688	5,706,529	1,124,680	63,307,373

UNITED STATES

Imports of Bleached and Unbleached Sulphate—1920 to 1934

By Countries of Origin

(Long Tons of 2,240 Pounds)

Countries:	Sweden	Canada	Finland	Norway	All Others	Total
1920	25,012	114,175	7,762	3,363	1,236	178,548
1921	57,702	89,729	5,799	522	2,733	159,006
1922	122,545	137,307	23,631	8,850	2,611	294,944
1923	84,739	131,304	20,089	10,258	2,728	249,118
1924	144,148	125,256	17,749	13,080	5,474	305,707
1925	159,282	127,567	21,170	10,568	4,635	323,222
1926	169,810	140,625	25,006	11,798	3,711	350,950
1927	180,897	138,660	19,602	10,690	2,102	351,951
1928	201,757	141,779	32,139	15,761	4,410	395,846
1929	227,760	116,290	31,907	17,079	6,333	399,639
1930	247,361	76,334	35,427	13,072	3,677	338,714
1931	259,238	52,700	55,692	4,385	6,183	378,198
1932	227,226	37,283	45,278	13,285	1,798	324,870
1933	375,583	29,634	49,288	16,513	2,612	473,630
1934	332,019	77,017	52,367	14,263	2,462	478,128

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

UNITED STATES

Imports of Bleached Sulphate Pulp—By Countries of Origin—1930-1934

(Long Tons of 2,240 Lbs.)

	Sweden	Canada	Germany	Norway	Sweden	Others	Total
1930	12,505	2,445	256	-----	-----	387	22,108
1931	22,940	2,263	160	28	7,851	-----	33,242
1932	19,872	1,522	-----	324	1,648	-----	23,366
1933	-----	2,249	-----	242	9,159	-----	11,650
1934	30,804	2,740	-----	452	14,279	-----	48,275

Source—Department of Commerce, Bureau of Foreign and Domestic Commerce.



phate
lue
33,776
58,367
18,674
35,030
72,381
18,676
70,948
84,298
93,459
57,446
04,350
28,747
85,121

Pulp
alue
50,269
99,010
21,373
07,660
86,794
85,996
19,775
86,270
48,071
86,179
868,339
776,663
307,373

Total
178,548
159,006
294,944
249,118
305,707
323,222
350,950
351,951
395,846
399,639
338,714
378,198
324,870
473,630
478,128

Total
22,108
33,242
23,366
11,650
48,275

PACIFIC PULP & PAPER INDUSTRY

UNITED STATES

Imports of Unbleached Sulphite—1920 to 1934

(Long Tons—2,240 Pounds)

	Sweden	Canada	Finland	Germany	Norway	All Others	Total
1920	73,957	207,667	13,502	7,193	3,627	2,062	308,008
1921	73,070	88,112	24,696	14,308	3,137	4,770	208,093
1922	193,218	146,690	27,642	16,968	29,134	4,048	422,700
1923	159,065	167,725	58,602	42,851	21,222	12,388	461,853
1924	226,978	192,308	48,007	54,944	26,079	13,554	561,920
1925	193,034	253,670	48,996	42,362	20,639	20,083	579,284
1926	244,925	226,153	61,804	54,305	18,613	23,123	628,923
1927	299,875	179,630	70,106	25,487	17,747	21,011	613,856
1928	297,130	179,751	92,778	23,933	23,456	23,607	640,660
1929	350,152	190,565	109,121	16,822	18,325	16,471	701,456
1930	331,968	180,417	99,881	19,049	20,210	14,152	665,075
1931	300,682	88,604	97,467	22,212	10,195	16,850	536,010
1932	270,894	56,335	95,579	42,330	31,402	19,667	516,207
1933	346,684	76,337	116,019	43,895	26,597	33,271	643,003
1934	314,984	80,867	112,562	47,319	22,529	24,856	603,117

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

UNITED STATES IMPORTS OF BLEACHED SULPHITE FROM 1920 TO 1934

By Countries of Origin

(Long Tons of 2,240 Pounds)

Countries—	Canada	Sweden	Germany	Norway	Finland	All Others	Total
1920	86,055	6,788	200	13,435	5,329	2,663	114,470
1921	59,198	5,770	1,335	8,180	7,591	2,931	85,005
1922	122,347	39,340	3,152	39,153	5,393	3,708	213,093
1923	132,138	41,958	12,655	46,849	12,063	4,917	250,580
1924	135,943	64,221	17,054	35,279	6,960	12,912	272,369
1925	137,598	71,577	16,662	48,111	4,130	8,898	286,976
1926	152,764	58,623	25,944	45,416	2,739	9,332	294,818
1927	171,280	46,369	25,341	49,928	4,595	13,617	311,138
1928	176,807	36,237	39,592	40,212	1,500	13,578	307,926
1929	187,469	47,199	45,471	39,312	7,306	7,478	334,235
1930	181,195	43,916	46,101	36,758	7,335	7,358	322,693
1931	185,037	49,063	47,155	18,011	8,922	7,923	316,111
1932	150,589	46,735	38,185	46,971	11,708	24,340	318,528
1933	194,754	65,264	32,564	56,303	22,420	29,328	400,633
1934	179,320	59,253	34,661	46,878	20,054	15,318	355,484

Source—Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.

PAPER AND PULP IMPORTS OF THE UNITED STATES

For the Twelve Months Ending Dec., 31, 1934 and 1933

PAPER IMPORTS

Articles—	12 Months, Ending Dec., 1934		12 Months, Ending Dec., 1933	
	Quantity	Dollars	Quantity	Dollars
Paper and Manufactures		86,518,680		77,446,538
Printing paper—				
Standard news print, free	1,000 lbs.	4,419,396		68,494,657
Other, n.e.s., dut.	lbs.	7,799,950		89,377
Grease and waterproof, dut.	lbs.	346,231		82,649
Kraft wrapping, dut.	lbs.	8,052,950		275,566
Other wrapping, dut.	lbs.	1,602,658		65,663
Writing and drawing, dut.	lbs.	1,635,370		273,443
Paper and envelope combinations, dut.	lbs.			34,075
Surfaced-coated, dut.	lbs.	1,634,656		464,459
Uncoated, decorated, embossed, dut.	lbs.	26,718		7,961
Tissue and similar paper:				
Not over 6 pounds to the ream, dut.	lbs.	1,091,594		450,705
Other, dut.	lbs.	507,263		164,003
Pulpboard, in rolls, dut.	lbs.	18,184,482		218,375
Paper board, pulpboard, n.e.s., cardboard, dut.	lbs.	15,594,084		229,692
Leatherboard, test, and wallboard, dut.	lbs.	7,219,306		368,768
Cigarette paper, books and covers, dut.	lbs.	15,774,318		3,426,325
Hanging paper (wallpaper), dut.	lbs.	248,274		71,730
Duplex, dactalcomania, not printed, free	lbs.	441,903		71,441
Paper boxes, dut.				403,309
Papier mache and pulp manufactures, dut.	lbs.			365,523
Other paper and manufactures, dut.		1,763,355		1,888,823

(Continued on page 72)

● One of a series of washers which purify the cellulose fibers in the mill of the Weyerhaeuser Timber Company, Pulp Division.



Pulp

IS ONLY AS PURE
AS THE WATER
WHICH
WASHES IT

To make a pure, stable pulp, the cellulose fibers must be washed free of all processing chemicals. Pulp is only as pure as the water which washes it. Millions of gallons of pure, neutral water are used daily in washing Weyerhaeuser pulp. The great volume of water thru efficient washing equipment in the manufacture of Weyerhaeuser Bleached Sulphite, endows the product with the characteristics of purity and neutrality.

**WEYERHAEUSER
STANDARD**

PULP DIVISION

WEYERHAEUSER TIMBER COMPANY
LONGVIEW, WASHINGTON

Total

308,008
208,093
422,700
461,833
561,920
579,284
628,923
613,856
640,660
701,456
665,075
536,010
516,207
643,003
603,117

Total

114,470
83,005
213,093
250,580
272,369
286,976
294,818
311,138
307,926
334,235
322,693
316,111
318,528
400,633
355,484

cc., 1933—
Dollars

77,446,538
58,494,657
89,377
82,649
275,366
65,663
273,443
34,075
464,459
7,961

450,705
164,003
218,375
229,692
368,768
3,426,325
71,730
71,441
403,309
365,523
1,888,823

PACIFIC PULP & PAPER INDUSTRY

PAPER BASE STOCK IMPORTS

Articles—	12 Months, Ending Dec., 1934—		12 Months, Ending Dec., 1933—	
	Quantity	Dollars	Quantity	Dollars
Paper base stocks		71,209,410		65,329,100
Pulpwoods	cords 971,190	7,322,856	723,208	5,362,335
Rough:				
Spruce, free	cords 168,974	1,232,400	119,227	899,739
Other, free	cords 15,643	85,140	625	3,200
Peeled:				
Spruce, free	cords 668,424	5,359,726	491,947	3,801,323
Other, free	cords 113,412	610,569	99,865	585,477
Rosced:				
Spruce, free	cords 4,737	35,021	11,544	72,596
Wood and other pulp:				
Mechanically ground wood pulp.				
Unbleached, free	tons 159,331	3,020,850	176,869	3,031,488
Bleached, free	tons 9,753	224,200	10,881	138,431
Sulphite wood pulp:				
Unbleached, free	tons 603,117	2,179,584	643,003	19,946,124
Bleached, free	tons 355,484	19,415,304	400,633	19,138,468
Sulphate, wood pulp:				
Unbleached (Kraft), free	tons 429,853	13,773,776	461,980	12,568,367
Bleached, free	tons 48,275	3,334,713	36,622	2,361,882
Soda pulp, free	tons 6,665	304,660	3,568	139,245
Other pulp, free	tons 137	25,182	188	30,005
Rags for paper stock, free	lbs. 101,523,797	1,282,668	171,503,795	1,413,830
All other paper stock, free	lbs. 52,524,939	753,617	105,046,100	1,153,925

PAPER AND PULP EXPORTS OF THE UNITED STATES

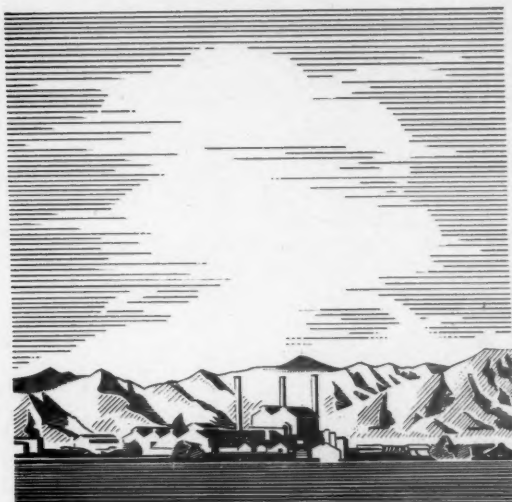
For the Twelve Months Ending Dec. 31, 1934 and 1933

PAPER EXPORTS

Articles—	12 Months, Ending Dec., 1934—		12 Months, Ending Dec., 1933—	
	Quantity	Dollars	Quantity	Dollars
Paper and Manufactures		18,877,850		14,599,007
Printing paper—				
Newsprint paper	lbs. 46,855,378	977,341	22,296,879	456,808
Book paper, not coated	lbs. 16,974,612	911,024	18,382,509	862,848
Cover paper	lbs. 948,388	132,887	823,732	103,688
Greaseproof and waterproof paper	lbs. 4,691,436	881,936	4,717,517	763,129
Overissue and old newspapers	lbs. 188,304,729	1,581,370	143,607,766	1,059,738
Wrapping paper	lbs. 46,169,444	1,957,283	24,373,666	1,249,810
Surface-coated paper	lbs. 7,157,076	776,134	6,130,350	617,219
Tissue and crepe paper	lbs. 4,802,569	631,536	3,815,430	544,164
Toilet paper	lbs. 7,411,241	599,605	6,636,325	534,450
Paper towels and napkins	lbs. 2,347,550	227,767	1,601,396	137,352
Boxboard (paper board and strawboard)	lbs. 46,886,422	952,209	44,632,705	946,289
Bristols and bristol board	lbs. 1,963,401	130,370	1,333,946	90,116
Other paper board	lbs. 21,112,154	800,428	18,927,779	663,099
Sheathing and building paper	lbs. 7,769,904	220,174	7,215,510	176,642
Fiber insulating board or bat	sq. ft. 34,039,019	981,534	32,985,083	852,261
Wall board of paper or pulp	sq. ft. 10,119,296	276,490	9,826,006	243,172
Blotting paper	lbs. 1,876,637	184,980	1,583,377	148,162
Filing folders, index cards, and other office forms	lbs. 872,976	304,174	843,449	271,715
Paperteries (fancy writing paper)	lbs. 186,450	45,217	128,088	28,794
Other writing paper	lbs. 18,513,617	1,264,961	13,526,825	884,430
Paper hangings (wall paper)	roll 800,458	89,465	781,375	64,141
Paper bags	lbs. 13,457,080	744,289	10,917,815	529,522
Boxes and cartons	lbs. 9,763,493	633,576	6,929,100	443,734
Envelopes	lbs. 877,449	146,362	921,438	128,882
Vulcanized fiber sheets, strips, rods and tubes	lbs. 3,546,066	951,159	2,801,358	726,727
Cash-register and adding-machine paper	lbs. 3,196,172	246,298	2,570,663	202,593
Other paper and paper products		2,229,281		1,869,522

PAPER BASE STOCK EXPORTS

Article—	12 Months, Ending Dec., 1934—		12 Months, Ending Dec., 1933—	
	Quantity	Dollars	Quantity	Dollars
Paper base stock		8,149,576		3,861,967
Pulpwoods	cords 12,104	66,458	10,737	68,322
Wood pulp—				
Sulphite wood pulp	tons 124,348	6,815,640	68,897	3,048,542
Soda wood pulp	tons 1,196	69,228	680	33,883
Other wood pulp	tons 2,073	120,691	1,130	31,458
Rags and other paper stockse	lbs. 107,527,402	1,077,559	74,504,798	679,762



SALT CAKE

98% + Sodium Sulphate

SODA ASH

99½% Sodium Carbonate



Made at
Trona on Searles Lake,
California



American Potash & Chemical Corporation

Western Office
609 So. Grand Ave., Los Angeles

Eastern Office
70 Pine St., New York

**Manufacturers of Trona Brand Muriate of Potash and
Three Elephant Borax**

Dec., 1933-
Dollars
5,329,100
5,362,335
899,739
3,200
3,801,323
585,477
72,596
3,031,488
138,431
19,946,124
19,138,468
12,568,367
2,361,882
139,245
30,005
1,413,850
1,153,925

Dec., 1933-
Dollars
14,599,007

456,808
862,848
103,688
763,129
1,059,738
1,249,810
617,219
544,164
534,450
137,352
946,289
90,116
663,099
176,642
852,261
243,172
148,162
271,715
28,794
884,430
64,141
529,522
443,734
128,882
726,727
202,593
1,869,522

Dec., 1933-
Dollars
3,861,967
68,322

3,048,542
33,883
31,458
679,762

Newsprint

NORTH AMERICAN PRODUCTION

Source—Newsprint Service Bureau

	Canada	United States	Newfoundland	Mexico	Total
1934—Twelve Months	2,599,000	957,000	316,000	20,000	3,892,000
1933— " "	2,017,004	946,374	270,834	16,367	3,250,579
1932— " "	1,914,316	1,008,588	271,804	12,683	3,207,391
1931— " "	2,221,454	1,157,436	294,983	15,195	3,689,068
1930— " "	2,504,147	1,282,372	287,259	14,286	4,088,064
1929— " "	2,728,827	1,392,276	255,501	18,680	4,395,284
1928— " "	2,381,102	1,417,572	230,745	16,981	4,046,400
1927— " "	2,086,949	1,485,495	202,852	14,137	3,789,433
1926— " "	1,881,737	1,684,218	186,471	13,412	3,765,838
1925— " "	1,522,217	1,530,318	96,588	12,681	3,161,804
1924— " "	1,352,994	1,481,425	64,648	11,500	2,910,567
1923— " "	1,266,232	1,485,000	63,906	12,000	2,827,138

NEWS PRINT PRODUCTION IN NORTH AMERICA—1923-1934

(Short Tons)

Source—News Print Service Bureau

Canadian Mills

	Production Tons
1934—Twelve Months	2,599,000
1933— " "	2,017,004
1932— " "	1,914,316
1931— " "	2,221,454
1930— " "	2,504,147
1929— " "	2,728,827
1928— " "	2,381,102
1927— " "	2,086,949
1926— " "	1,881,737
1925— " "	1,522,217
1924— " "	1,352,994
1923— " "	1,266,232

United States Mills

1934—Twelve Months	957,000
1933— " "	946,374
1932— " "	1,008,588
1931— " "	1,157,436
1930— " "	1,282,372
1929— " "	1,392,276
1928— " "	1,417,572
1927— " "	1,485,495
1926— " "	1,684,218
1925— " "	1,530,318
1924— " "	1,481,425
1923— " "	1,485,000

United States and Canadian Mills

1934—Twelve Months	3,556,000
1933— " "	2,963,378
1932— " "	2,922,904
1931— " "	3,378,890
1930— " "	3,786,519
1929— " "	4,121,103
1928— " "	3,798,674
1927— " "	3,572,444
1926— " "	3,565,955
1925— " "	3,052,535
1924— " "	2,834,419
1923— " "	2,751,232

NEWS PRINT IN THE UNITED STATES, 1913-1934

Compiled from Newsprint Service Bureau Data

(Tons)

Year	Production	Imports	Exports	Balance at Home
1913	1,305,000	220,000	43,000	1,482,000
1914	1,313,000	315,000	61,000	1,567,000
1915	1,239,000	368,000	55,000	1,552,000
1916	1,315,000	468,000	76,000	1,707,000
1917	1,359,000	559,000	94,000	1,824,000
1918	1,260,000	596,000	97,000	1,759,000
1919	1,375,000	628,000	111,000	1,895,000
1920	1,512,000	730,000	49,000	2,193,000
1921	1,225,000	792,000	17,000	2,000,000
1922	1,448,000	1,029,000	26,000	2,451,000
1923	1,485,000	1,309,000	16,000	2,778,000
1924	1,481,000	1,357,000	17,000	2,821,000
1925	1,530,000	1,448,000	23,000	2,955,000
1926	1,684,000	1,851,000	19,000	3,517,000
1927	1,486,000	1,984,000	12,000	3,461,000
1928	1,418,000	2,157,000	11,000	3,564,000
1929	1,392,000	2,421,000	19,000	3,796,000
1930	1,282,000	2,280,000	10,000	3,551,000
1931	1,157,000	2,067,000	10,000	3,212,000
1932	1,009,000	1,791,000	8,000	2,792,000
1933	946,000	1,793,000	11,000	2,728,000
1934	957,000	2,210,000	23,000	3,144,000

NEWS PRINT IN CANADA, 1913-1934

Source—Newsprint Service Bureau

(Tons)

Year	Production	Exports	Balance at Home
1913	350,000	*	*
1914	415,000	*	*
1915	489,000	*	*
1916	608,000	*	*
1917	686,000	*	*
1918	735,000	*	*
1919	803,000	708,000	95,000
1920	876,000	762,000	114,000
1921	808,000	709,000	99,000
1922	1,082,000	960,000	122,000
1923	1,266,000	1,138,000	128,000
1924	1,353,000	1,219,000	134,000
1925	1,522,000	1,402,000	150,000
1926	1,882,000	1,732,000	205,000
1927	2,087,000	1,882,000	205,000
1928	2,381,000	2,207,000	174,000
1929	2,729,000	2,511,000	218,000
1930	2,504,000	2,331,000	173,000
1931	2,221,000	2,008,000	213,000
1932	1,914,000	1,777,000	137,000
1933	2,017,000	1,838,106	179,000
1934	2,599,000	2,400,000	199,000

*No data.

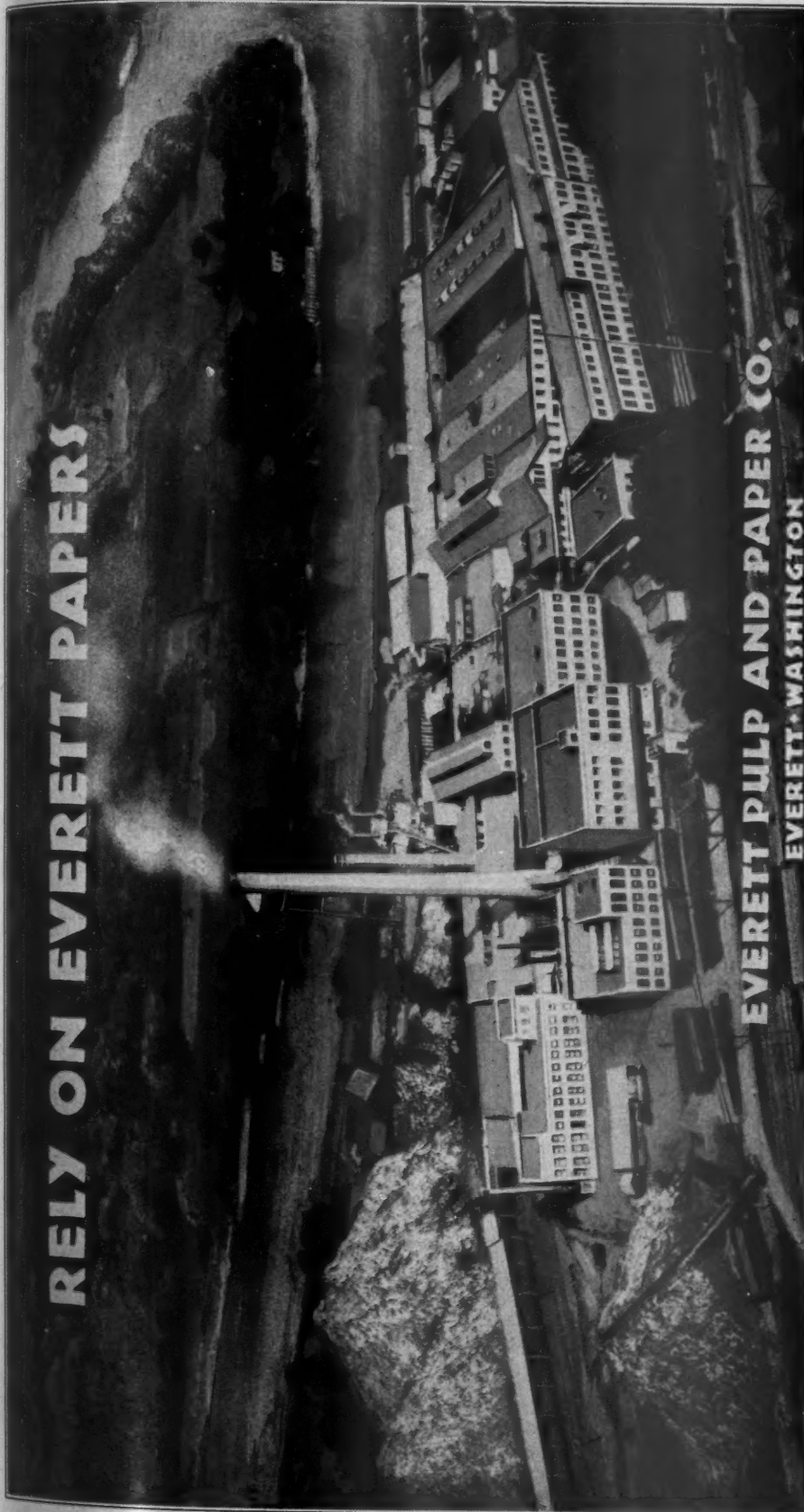
Total
3,892,000
3,250,579
3,207,391
3,689,068
4,088,064
4,395,284
4,046,400
3,789,433
3,765,838
3,161,804
2,910,567
2,827,130

13-1934

Balance
at Home
1,482,000
1,567,000
1,552,000
1,707,000
1,824,000
1,759,000
1,895,000
2,193,000
2,000,000
2,451,000
2,778,000
2,821,000
2,955,000
3,517,000
3,461,000
3,564,000
3,796,000
3,551,000
3,212,000
2,792,000
2,728,000
3,144,000

4

Balance
at Home
95,000
114,000
99,000
122,000
128,000
134,000
120,000
150,000
205,000
174,000
218,000
173,000
213,000
137,000
179,000
199,000



PIONEER PACIFIC COAST MANUFACTURERS OF

BOOK PAPERS, WRITING PAPERS and SPECIALTIES

Our Converting Department Manufactures Tablets, Composition Books, Commercial Stationery and School Supplies

Sales Offices—LOS ANGELES, 124 W. Fourth St. — SAN FRANCISCO, 244 California St.



PACIFIC PULP & PAPER INDUSTRY

WORLD PRODUCTION OF NEWSPRINT PAPER—1927 TO 1934*

(Short tons of 2,000 lbs.)

Countries—	1927 Tons	1928 Tons	1929 Tons	1930 Tons	1931 Tons	1932 Tons	1933 Tons	1934 Tons	8 Year Average
Canada	2,087,000	2,381,000	2,729,000	2,504,000	2,221,000	1,915,000	2,017,000	2,599,000	2,307,000
United States ..	1,486,000	1,405,000	1,392,000	1,282,000	1,157,000	1,007,000	946,000	957,000	1,204,000
Great Britain ..	615,000	646,000	637,000	608,000	719,000	790,000	830,000	940,000	723,000
Germany	565,000	600,000	623,000	590,000	540,000	450,000	412,000	446,000	528,000
Newfoundland ..	203,000	231,000	256,000	287,000	295,000	272,000	271,000	316,000	266,000
Sweden	239,000	234,000	275,000	240,000	265,000	257,000	266,000	272,000	256,000
Japan	246,000	267,000	286,000	285,000	258,000	272,000	304,000	344,000	283,000
France	121,000	136,000	210,000	240,000	243,000	275,000	335,000	353,000	239,000
Finland	200,000	214,000	217,000	223,000	241,000	254,000	285,000	316,000	244,000
Norway	192,000	198,000	189,000	202,000	104,000	200,000	167,000	155,000	176,000
Russia	10,000(?)	7,000(?)	48,000(?)	90,000(?)	100,000(?)	125,000	135,000(?)	190,000	88,000(?)
Netherlands ..	77,000	76,000	77,000	84,000	79,000	85,000	87,000	92,000	82,000
Italy	42,000	45,000	52,000	69,000	69,000	74,000	72,000	68,000	61,000
Austria	50,000	57,000	62,000	64,000	62,000	53,000	50,000	50,000	56,000
Spain	25,000	26,000	30,000	32,000	62,000	65,000(?)	65,000	42,000	43,000
Switzerland ..	40,000(?)	40,000	48,000	47,000	49,000	45,000(?)	45,000	39,000	44,000
Belgium	50,000	50,000	57,000	50,000	44,000	40,000	40,000	51,000	48,000
Czechoslovakia.	45,000	45,000	47,000	44,000	42,000	40,000	38,000	37,000	42,000
Poland	17,000	20,000	23,000	27,000	27,000	23,000	23,000	32,000	24,000
Estonia	21,000	20,000	27,000	29,000	17,000	6,000	6,000	6,000	17,000
Mexico	14,000	17,000	19,000	14,000	15,000	13,000	16,000	20,000	16,000
Denmark	16,000	16,000	11,000	10,000	10,000	9,000	7,000	6,000	11,000
Latvia	3,000	3,000	4,000	4,000	3,000	5,000	5,000	5,000	4,000
Chile	—	—	—	—	—	—	—	6,000	1,000
Total	6,364,000	6,744,000	7,319,000	7,025,000	6,622,000	6,275,000	6,421,000	7,342,000	6,763,000

(?) Figures incomplete.

* Compiled by the Newsprint Service Bureau.

SOURCES OF NEWS PRINT USED IN THE UNITED STATES

(Tons in Round Numbers)

Source: News Print Service Bureau

	U. S. Production	U. S. Exports	Imports into the U. S. From			Available for
			Canada	Newfoundland	Europe	Consumption
1913	1,305,000	43,000	219,000	—	1,000	1,482,000
1914	1,313,000	61,000	310,000	—	5,000	1,567,000
1915	1,239,000	55,000	367,000	—	1,000	1,552,000
1916	1,315,000	76,000	468,000	—	—	1,707,000
1917	1,359,000	94,000	558,000	—	1,000	1,824,000
1918	1,260,000	97,000	596,000	—	—	1,759,000
1919	1,375,000	111,000	628,000	—	3,000	1,895,000
1920	1,512,000	49,000	679,000	1,000	50,000	2,193,000
1921	1,225,000	17,000	657,000	—	135,000	2,000,000
1922	1,448,000	26,000	896,000	—	133,000	2,451,000
1923	1,485,000	16,000	1,109,000	—	200,000	2,778,000
1924	1,481,000	17,000	1,197,000	4,000	156,000	2,821,000
1925	1,530,000	23,000	1,295,000	20,000	133,000	2,955,000
1926	1,684,000	19,000	1,658,000	94,000	100,000	3,517,000
1927	1,486,000	12,000	1,776,000	89,000	122,000	3,461,000
1928	1,418,000	11,000	1,926,000	114,000	116,000	3,563,000
1929	1,392,000	19,000	2,195,000	132,000	96,000	3,796,000
1930	1,282,000	10,000	1,989,000	156,000	134,000	3,551,000
1931	1,157,000	10,000	1,754,000	160,000	151,000	3,212,000
1932	1,009,000	8,000	1,533,000	114,000	144,000	2,792,000
1933	946,000	11,000	1,545,000	95,000	153,000	2,728,000
1934	957,000	23,000	1,956,000	107,000	147,000	3,144,000

ALUMINUM SULPHATE

Sulphuric Acid
Salt Cake

Sodium Fluoride

Sodium Silicate

Anhydrous Bisulphite Soda

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GENERAL CHEMICAL COMPANY

343 Sansome St.
San Francisco, Calif.

40 Rector St.
New York, N. Y.

Sales Offices in Principal Cities



Also BAKER & ADAMSON C. P. Acids, Laboratory Reagents and Fine Chemicals

NEWSPRINT EXPORTS FROM CANADA*

TO:	1932 Tons	1933 Tons	1934 Tons
United Kingdom	87,215	107,041	79,087
South America	53,274	50,061	106,024
South Africa	9,921	6,874	10,443
Australia	39,492	57,561	99,567
New Zealand	12,210	16,758	25,857
U. S. A.	1,520,294	1,519,680	1,958,945
Japan	32,180	57,615	57,615
All other	59,357	47,951	62,086
Total	1,781,763	1,838,106	2,399,624

*Compiled from Canadian Pulp & Paper Association and government reports.

EXPORTS OF NEWS PRINT FROM
UNITED STATES

(Tons)

Source—Newsprint Service Bureau

Country—	1933	1934
Europe	504	404
Canada	10	6
Central America	804	1,391
Cuba	2,090	2,735
South America	1,220	1,400
China and Japan	4,540	14,273
Philippine Islands	1,770	2,905
Other Countries	235	306
Total	11,173	23,420

UNITED STATES

Newsprint Imports—1933-1934

(Tons of 2,000 lbs.)

From—	1933	1934
Finland	56,577	56,813
Germany	12,058	5,740
Norway	16,591	16,417
Sweden	68,062	68,090
Canada	1,545,293	1,958,945
Newfoundland	95,000	107,000
Other	15	—
Total	1,793,581	2,213,005

IMPORTS OF EUROPEAN NEWS PRINT INTO THE U. S.*
January 1, 1920—December 31, 1934 (Tons of 2,000 lbs.)

	Sweden	Germany	Finland	Norway	Other	Total
1920	18,875	21,066	3,244	5,916	1,337	50,438
1921	48,932	38,938	22,661	20,193	4,613	135,337
1922	51,812	32,838	26,205	17,292	4,741	132,888
1923	64,570	52,290	41,782	33,829	7,798	200,269
1924	60,827	38,840	35,639	17,259	3,238	155,803
1925	65,318	25,862	21,683	17,030	2,421	132,314
1926	46,020	12,884	34,292	6,176	554	99,926
1927	66,920	7,096	29,330	16,796	1,919	122,061
1928	55,718	9,170	40,237	10,864	418	116,407
1929	50,717	9,741	32,293	3,498	124	96,373
1930	69,268	13,788	41,913	9,326	—	134,295
1931	66,688	21,910	47,992	14,444	35	151,069
1932	61,079	14,323	46,633	22,692	194	144,921
1933	68,062	12,058	56,577	16,591	15	153,303
1934	68,090	5,740	56,813	16,417	—	147,060
Total 15 years	863,096	316,544	537,294	228,323	24,407	1,972,664
Percent	43.8	16.0	27.2	11.6	1.4	100.0

* Source—Newsprint Service Bureau.

UNITED STATES

Paper Board—Production, Shipments, Etc.¹

(.012 of an inch or more in thickness)

Year and Month—1934	—Operation—(Inch hours— (Based on last dryer width))		—Production—(Short tons)—				New orders (Short tons)	Unfilled orders end month (Short tons)
	Rated Capacity	Operated	Per Cent of Capacity	Rated Capacity	Output	Per Cent of Capacity		
January	14,660,767	8,386,520	57.2	401,900	230,311	57.3	218,169	63,328
February	13,048,031	8,298,684	63.6	351,714	223,366	63.5	234,318	75,143
March	14,995,780	9,454,746	63.0	401,966	254,819	63.4	264,985	86,033
April	13,703,272	8,978,520	65.5	369,881	244,334	66.1	230,754	76,578
May	14,934,038	8,374,420	56.1	403,139	223,478	55.4	225,957	80,958
June	14,658,061	8,355,200	57.0	392,585	224,214	57.1	214,236	72,990
July	13,994,803	7,375,422	52.7	384,143	201,924	52.6	200,278	73,256
August	15,077,417	8,902,258	59.0	419,635	246,266	58.7	246,187	71,523
September	13,701,416	8,557,827	62.5	380,272	233,426	61.4	228,804	72,930
October	15,348,748	9,663,314	63.0	412,533	263,679	63.9	255,744	68,756
November	14,790,616	8,530,695	57.7	393,982	227,733	57.8	218,980	62,352
December	14,367,204	7,490,443	52.1	368,837	199,940	54.2	201,121	65,723
Total (Year 1934)	173,280,153	102,368,049	59.1	4,680,587	2,773,490	59.2	2,739,533	—
Total (Year 1933)	165,594,126	105,986,270	64.0	4,619,730	2,912,374	63.0	2,913,370	—
Total (Year 1932)	138,115,824	75,979,629	55.0	3,904,824	2,152,045	55.1	2,148,991	—
Total (Year 1931)	137,218,968	91,894,961	67.0	3,879,836	2,556,851	65.9	2,527,024	—
Total (Year 1930)	139,179,840	96,843,592	69.6	3,917,436	2,699,595	68.9	2,685,373	—

¹ Monthly statistics of Paperboard for 94 identical manufacturers compiled from data furnished by the National Paperboard Association from reports of members, and by manufacturers reporting direct to the Bureau of the Census, are presented in the following table. These statistics were previously published under the title "Box Board."

Rated (24-hour) capacity data of paperboard machines in inch-hours in this report are based on last dryer width whereas those shown in reports published for earlier years were based on maximum trim width. The capacity data vary according to the normal number of working days in each month.

(Continued on page 80)

HOOKER CHEMICALS



TACOMA PLANT

HOOKER PRODUCTS

LIQUID CHLORINE
MURIATIC ACID

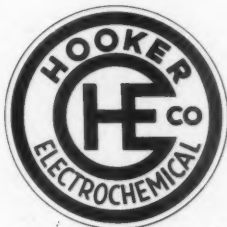
CAUSTIC SODA
SOLID—LIQUID—FLAKE

Bleaching Powder—Monochlorbenzene—Paradichlorbenzene—Benzoate of Soda—
Benzoic Acid—Benzoyl Chloride—Benzyl Alcohol—Sulfur Monochloride—Sulfur
Dichloride — Sulfuryl Chloride — Ferric Chloride — Antimony Chloride — Salt.

HOOKER SERVICE

WESTERN PLANT
Tacoma, Washington

Western Sales Office
Tacoma, Washington



EASTERN PLANT
Niagara Falls, N. Y.

Eastern Sales Office
60 East 42nd St.,
New York City

Hooker Electrochemical Company



TACOMA, WASHINGTON



PACIFIC PULP & PAPER INDUSTRY

SHIPMENTS, STOCKS AND PRODUCTION OF PAPERBOARD AND CONSUMPTION AND STOCKS OF WASTE PAPER (85 Selected Manufacturers)*
(Short Tons)

Year and Month—1934	Shipments of box board	Stocks of Box Board end of month	Production	Consumption of Waste Paper			Stocks of Waste Paper, End of Mo.		
				Capacity	Consumed	Per Cent of Capacity	Total	At plants	In transit and unshipped purchases
January	204,940	87,103	217,441	309,593	173,300	56.0	206,324	178,545	27,779
February	211,928	88,149	213,084	307,577	180,765	58.8	234,605	197,540	37,065
March	241,316	87,487	240,654	380,710	229,772	60.4	237,406	206,060	31,346
April	235,846	85,596	233,898	322,533	197,741	61.3	244,141	215,648	28,493
May	224,102	78,506	216,372	325,006	176,018	54.2	255,584	227,877	27,707
June	213,067	74,104	209,151	397,931	207,476	52.1	237,806	221,836	15,970
July	197,944	72,838	197,134	422,473	224,874	53.2	258,024	230,298	27,726
August	244,581	73,016	245,077	348,924	* 208,332	59.7	257,696	232,819	24,877
September	219,924	74,059	221,214	329,827	200,164	60.7	268,187	241,569	26,618
October	247,979	75,612	249,826	362,732	230,695	63.6	264,099	231,094	33,005
November	211,019	75,865	211,422	347,053	196,461	56.6	254,705	226,941	27,764
December	188,924	74,014	187,461	335,464	168,375	50.2	243,692	223,692	20,000
Total (Year 1934)	2,641,570	-----	2,642,734	4,189,823	2,393,973	50.2	-----	-----	-----
Total (Year 1933)	2,392,374	-----	-----	3,245,183	2,033,175	62.7	-----	-----	-----
Total (Year 1932)	2,160,093	-----	-----	3,633,531	2,151,194	59.2	-----	-----	-----
Total (Year 1931)	2,544,301	-----	-----	3,598,254	2,391,368	66.5	-----	-----	-----
Total (Year 1930)	2,692,498	-----	-----	3,789,427	2,572,445	67.9	-----	-----	-----

* Revised.

U. S. PAPER PRODUCTION—1933*

(Tons of 2,000 lbs.)

Total—All Grades	9,190,017
Newsprint	928,332
Book papers	1,080,196
Paperboard	4,076,290
Wrapping	1,440,029
Writing	478,356
Cover	12,697
Tissue	406,760
Absorbent	79,832
Building	328,275
All Other	359,250

* Bureau of Census, U. S. Department of Commerce, Census of Manufacturers.

U. S. PAPER PRODUCTION—1934*

(Tons of 2,000 lbs.)

Total—All Grades	9,186,226
Newsprint	989,705
Book Papers	1,055,247
Paperboard	4,073,309
Wrapping	1,357,438
Writing	414,542
Cover	17,011
Tissue	398,770
Absorbent	78,953
Building	327,866
All Other	473,385

* Bureau of Census, U. S. Department of Commerce, Census of Manufacturers.



Western Hemlock near Cascade Head in Oregon. 86 years old, 20,000 cubic feet per acre or 100,000 board feet.

Partial List of . . . SUMNER Pulp Machinery Users

WASHINGTON PULP & PAPER CORPORATION	Port Angeles, Wash.
Cut-up Machinery, 110" Chipper, No. 45 Hogs, Axe Splitters.	
OLYMPIC FOREST PRODUCTS COMPANY	Port Angeles, Wash.
110" Chipper, Flat Chip Screens, Cut-up Machinery, Agitators, Pulp Sheet Cutter, Squeeze Rolls, Chip Duster, 48" Double Washer, Reduction Drives.	
NATIONAL PAPER PRODUCTS COMPANY	Port Townsend, Wash.
Cut-up Machinery, 110" Chipper, 84" Chipper.	
GRAYS HARBOR PULP & PAPER COMPANY	Hoquiam, Wash.
No. 45 Hogs, Mould Rolls, Couch Rolls, 51" Chippers, Hand Barkers.	
RAINIER PULP & PAPER COMPANY	Shelton, Wash.
Norman Chip Dusters, 66" Chipper, Agitators, Pulp Marking Rolls, Reduction Drives.	
CROWN WILLAMETTE PAPER COMPANY	Camas and Cathlamet Plants
Round Log Barker, 110" Chipper, Cut-up Machinery, Reduction Drives, No. 45 Hog, No. 65 Hog, Disc Barker.	
EVERETT PULP & PAPER COMPANY	Everett, Wash.
51" Chipper, 66" Chipper, Re-chipper, Agitators, Norman Chip Duster, Rotary Chip Screen, Reduction Drives, Digester Valves, Tanks, Wood Room Machinery.	
WEYERHAEUSER TIMBER COMPANY (Pulp Division)	Longview, Wash.
Cut-up Machinery, 110" Chippers, 84" Chipper, Chip Crushers, Flat Chip Screens, 48x72" Single Press Wet Machine.	
SOUNDVIEW PULP COMPANY	Everett, Wash.
10" Edger, Log Haul, 48x84" Single Press Wet Machine, Norman Chip Dusters, Mould Rolls, Chip Elevator, Reduction Drives.	
SPAULDING PULP & PAPER COMPANY	Newberg, Oregon
Two 48x72" Double Press Wet Machines, Pulp Drier, Reduction Drives, 48x96" Double Press Wet Machines.	
PUGET SOUND PULP & TIMBER COMPANY	Bellingham and Anacortes Plants
66" Chipper, Cut-up Machinery, three 48x72" Double Press Wet Machines, Reduction Drives.	
OREGON PULP & PAPER COMPANY	Salem, Oregon
Two 48x72" Single Press Wet Machines, 84" Chipper, Norman Chip Duster, Axe Splitters.	
PACIFIC MILLS, Ltd.	Ocean Falls, B. C.
Two 84" Chippers.	
INTERNATIONAL PULPWOOD SUPPLY COMPANY	
66" Chipper, 84" Chipper, Cut-up Machinery, Reduction Drives.	
HAWLEY PULP & PAPER COMPANY	Oregon City, Oregon
96" Cut-off Saw.	
TOFTE CELLULOSEFABRIK	Norway
Norman Chip Duster.	
ST. HELENS PULP & PAPER COMPANY	St. Helens, Oregon
Cut-up Machinery, Axe Splitters.	
FIBREBOARD PRODUCTS COMPANY	Port Angeles, Wash.
Cut-up Machinery, Axe Splitter, Rotary Sulphur Burner.	
COLUMBIA RIVER PAPER MILLS	Vancouver, Wash.
Two 4-Pocket Pulp Grinders, Cut-up Machinery.	
LONGVIEW FIBRE COMPANY	
Cut-up Machinery and Grinder Cylinders.	

SUMNER IRON WORKS, Everett, Wash.

Pioneer Pacific Coast Builders of
SAW MILL and PULP MILL MACHINERY

OTHER NATIONS

WOOD PULP PRODUCTION IN NORWAY,
SWEDEN AND FINLAND

(Metric Tons)

	Mechanical	—Sulphite—		Sulphate
		Bleached	Unbleached	
Norway				
1929	514,900	175,000	196,000	71,000
1930	514,500	160,000	127,000	2,200
1931	349,600	75,600	55,300	6,800 (1)
1932	482,071	198,142	163,865	55,871
1933	448,300	330,000		56,300 (1)
‡1934		285,000	129,000	23,000
Sweden				
1929	658,300	182,600	1,049,700	649,900
1930	578,300	182,100	1,048,900	622,700
1931	570,000	173,000	845,000	607,000
1932	498,200	191,200	685,000	621,900
1933		100,000	743,000	658,000
1934				
Finland				
1929	347,500	63,500	408,800	113,600
1930	371,400	77,100	441,600	165,700
1931	371,800	70,600	417,400	173,800
1932	445,000	640,000		230,000
1933	465,000	684,345		236,900
1934	275,500	759,700		261,000

Metric ton equals 2,205 pounds.

‡Preliminary figures.

‡Production for export only. Entire production not yet available.

Source: U. S. Dept. of Commerce.

‡Approximate.

EXPORTS OF PAPER AND BOARDS FROM
NORWAY

(Metric Tons)

Classes—	1931	1932	1933
Total, Paper and Boards	183,868	299,280	280,407
Wrapping Paper	15,493	25,972	70,897
Greaseproof	10,017	17,047	17,081
Newsprint	87,603	161,455	137,562
Other Paper	61,024	75,892	31,527
Boards	9,731	18,914	23,340

Metric tons equals 2,205 pounds.

GERMANY
PULP PRODUCTION

(Metric Tons)

Year	Chemical	Mechanical	Total
1913	839,000	674,000	1,513,000
1926	971,000	727,000	1,698,000
1929	1,204,000	852,000	2,056,000
1930	1,175,000	830,000	2,005,000
1931	966,000	763,000	1,729,000
1932	966,000	615,000	1,581,000
1933*	983,000	690,000	1,673,000
1934	1,167,000	807,000	1,974,000

*Estimated.

GERMANY
PULP PRODUCTION BY GRADES

(Metric Tons)

Grades:	1933	1934
Unbleached Sulphite	630,000	
Bleached Sulphite	285,000	
Unbleached Sulphite and Straw	68,000	
Total Chemical Pulp	983,000	1,167,000
Mechanical Pulp	690,000	807,000
Total, All Pulp	1,673,000	1,974,000

*Estimated.

FINLAND

Production

(Metric tons)

	1932	1933	1934
Mechanical groundwood	445,000	465,000	‡275,500
Sulphite pulp	639,219	684,345	759,668
Sulphate pulp	230,200	236,900	261,056
Paper	335,000	370,000	
Boards	70,000	73,000	
Total	1,719,419	1,829,245	

Source: U. S. Dept. of Commerce. The Finnish Paper and Timber Journal.

‡Production for export only. Total production figures not available.

FINLAND

Exports of Pulp, Paper, Board, Etc., 1930-1931-1932-1933-1934

Metric Tons

Wood Pulp—	1930	1931	1932	1933	1934
Mechanical (Total dry weight)	157,442	157,395	180,316	207,916	248,953
Sulphite	358,195	424,189	562,002	593,317	608,519
Sulphate	117,634	204,197	194,895	204,561	207,157
Cardboard	46,881	47,495	56,419	59,988	64,342
Newsprint	187,812	190,880	200,948	225,495	287,000
Other Papers	71,846	85,491	87,744	93,854	70,444
Total value of pulp and paper exports (Fmk.)	1,840,200,000	1,828,000,000	2,056,900,000	2,107,900,000	
Total value of pulp and paper imports (Fmk.)	23,600,000	17,100,000	14,000,000	16,200,000	

Source: The Finnish Paper & Timber Journal and Bank of Finland Bulletin.

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PAPER MAKERS CHEMICAL CORPORATION

KALAMAZOO, MICHIGAN

PLANTS IN ALL PAPER-MAKING AREAS

Distributor of Hercules Wood Rosins and Steam-distilled Pine Oils

PACIFIC PULP & PAPER INDUSTRY

GERMANY
PAPER AND BOARD PRODUCTION
 (Metric Tons)

Year	Paper	Board	Total
1919	792,000	163,000	955,000
1920	1,108,000	239,000	1,347,000
1921	1,212,000	261,000	1,473,000
1922	1,582,000	383,000	1,965,000
1923	1,185,000	234,000	1,419,000
1924	1,377,000	277,000	1,654,000
1925	1,692,000	366,000	2,058,000
1926	1,668,000	329,000	1,997,000
1927	2,008,000	434,000	2,442,000
1928	2,105,000	442,000	2,547,000
1929	2,126,000	430,000	2,556,000
1930	1,969,000	405,000	2,374,000
1931	1,824,000	347,000	2,171,000
1932	1,639,000	330,000	1,969,000
1933	1,729,000	329,000	2,058,000
1934	1,989,000	404,000	2,393,000

Source: Wochenblatt für Papierfabrikation.
U. S. Dept. of Commerce.

EXPORTS OF PAPER AND BOARDS FROM FINLAND

Class—	1932	1933	1934
Paper, total	288,692	319,727	357,444
Wrapping paper, coarse brown	33,313	52,287	—
Wrapping paper, other	17,245	—	—
Greaseproof paper	402	403	—
Newsprint	200,948	225,946	287,000
Wall paper	1,133	—	—
Writing paper	2,629	—	—
Tissue paper	1,035	—	—
Cigarette paper	380	—	—
Other paper	31,607	32,148	—
Boards, total	56,419	59,988	64,342
Paper and boards, total	345,111	379,715	421,786

Metric tons equals 2,205 pounds.
Source: U. S. Dept. of Commerce. 1934 figures from the Finnish Paper & Timber Journal.

EXPORTS OF WOOD PULP FROM NORWAY

Classes—	1932	1933	1934†
Mechanical Groundwood, Total	609,046	588,249	751,072
Bleached, Dry	3,528	—	—
Bleached, Wet	605,302	—	—
Unbleached, Wet	216	—	—
Chemical Pulp, Total	267,115	233,310	260,830
Sulphite, Unbleached, Dry	80,524	59,699	61,421
Sulphite, Bleached, Dry	152,410	156,359	171,179
Sulphite, Bleached or Unbleached, Wet	605,302	—	13,138
Sulphate, Unbleached, Dry	17,137	17,252	15,092

Metric tons equals 2,205 pounds.
Source: U. S. Dept. of Commerce.
†Approximate.

CZECHOSLOVAKIA
1933-1934 Production

(U. S. Dept. of Commerce Estimates—Metric Tons)

	1933	1934
Mechanical pulp	7,000	—
Sulphite pulp	180,000	240,000
Newsprint	34,500	189,350
Other paper	145,500	—

GERMANY
PAPER PRODUCTION BY GRADES

	(Metric Tons—2,205 lbs.)		
Newsprint	492,763	401,170	372,990
Packing Paper	207,282	192,342	212,492
Printing and Writing (with ground wood)	333,998	319,925	355,509
Printing and writing (wood free)	133,566	121,534	138,349
Boards	347,082	329,592	328,705
All Other	656,704	603,451	650,390
Total	2,171,395	1,968,014	2,058,435

PULP AND PAPER EXPORTS

	All Grades	
	Metric tons	Value (RM)
1932	653,126	144,404,000
1933	557,657	111,065,000

EXPORTS OF WOOD PULP FROM SWEDEN

Class—	1932	1933	1934
Mechanical Pulp:			
Wet	378,105	312,373	321,000
Dry	31,048	—	—
Chemical Pulp:			
Sulphite, Bleached	151,121	204,872	215,227
Sulphite, Unbleached, Wet	15,191	743,671	751,561
Sulphite, Unbleached, Dry	490,369	—	—
Sulphate, Bleached	1,924	22,661	36,706
Sulphate, Unbleached, Wet	16,975	636,965	715,000
Sulphate, Unbleached, Dry	410,338	—	—
Total	1,920,541	2,039,494	—

Amounts given in actual wet and dry weights.
Source: U. S. Dept. of Commerce.

EXPORTS OF PAPER AND BOARDS FROM SWEDEN

Classes—	1931	1932	1933	1934
Paper and Boards, Total	484,735	471,603	516,466	476,520
Paper, Total	442,576	425,490	458,582	428,007
Newsprint	183,111	185,428	182,950	190,551
Coated	5,430	4,342	—	—
Kraft Wrapping	115,162	102,781	—	135,467
Sulphite Wrapping	87,367	83,186	254,380	101,956
Other Wrapping	16,127	18,499	—	—
Greaseproof	24,445	19,253	24,136	24,233
Book and Writing Papers	10,934	12,001	6,661	—
Boards	42,159	46,113	41,976	48,513

Metric tons equals 2,205 pounds.
Source: U. S. Dept. of Commerce. Swedish Wood Pulp Journal.
†Major grades only.

AUSTRIAN PRODUCTION

	1932	1933	1934
	Metric tons	Metric tons	Metric tons
Paper	200,950	200,530	198,370
Board	22,690	29,430	—
Chemical pulp	199,640	221,990	238,520
Mechanical pulp	83,410	89,830	80,050
Newsprint	—	—	45,220

AUSTRIAN PULP PRODUCTION—1934

Bleached Sulphite	98,310
Unbleached Sulphite	123,330
Sulphate	16,830

JAPAN
Imports of Paper
(Short Tons)

	Yen Value	Tons
1933	9,792,660	53,135
1934	11,322,915	68,770

JAPANESE PRODUCTION OF FOREIGN STYLE

PAPER

	1933 Pounds	1934 Pounds
Best Grade Printing Paper	135,943,834	
Ordinary Printing Paper	135,724,547	
Writing & Drawing Paper	45,744,697	
Imitation Paper	92,198,539	
Art Paper	16,506,872	
Newsprint	608,621,925	
Roll "Hanshi"	41,190,194	
Colored Paper	16,819,607	
Wrapping Paper	200,236,986	
Japanese Paper	23,635,070	
Cardboard	76,715,541	
Miscellaneous	47,767,116	
Total	1,444,104,928	1,591,478,000

PHILIPPINE PAPER IMPORTS

1934	4,533,000 pesos
1933	3,072,000 pesos

Imports of printing paper, mostly newsprint, increased by 50 per cent in 1934 over 1933. All of this increase went to the United States. Imports of newsprint from Germany, Canada, Norway, Netherlands and Finland were about the same as in 1933.

Imports of American paper amounted to 66 per cent of the total in 1934. In wrapping papers the imports from other countries, notably Norway and Sweden, declined while the imports from the United States increased.—U. S. Dept. of Commerce.

SHANGHAI PULP IMPORTS

The Shanghai customs district records the importation of about 1,000 long tons of pulp per month. Ninety per cent of this comes from the West Coast of the United States and Canada, the balance from the Scandinavian countries.

About 80 per cent of the sulphite pulp coming into Shanghai is now bleached and 20 per cent is unbleached. This situation has undergone a complete reversal in the past year and a half, unbleached sulphite formerly accounting for the 80 per cent.

ARGENTINE PAPER IMPORTS

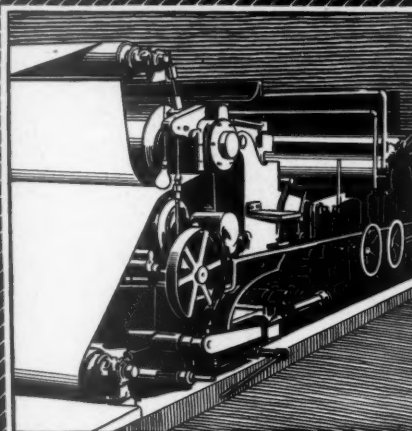
In 1933 Argentina imported paper valued at 52,854,702 paper pesos or approximately \$13,213,426. Germany was first in paper exports to Argentina, with Sweden, Finland and Canada following in order. The United States was sixth but increased its exports of paper to Argentina by 15 per cent over 1932. German paper imports by Argentina declined 16 per cent in 1933 over 1932.

The bulk of the German papers imported are book, writing and newsprint.

FINLAND'S EXPANSION

A program of expansion wood pulp mills contemplates the addition of from 76,000 to 78,000 metric tons to the sulphite pulp output, 200,000 tons to the sulphate pulp output, and 23,000 tons to the groundwood output.

The present productive capacity of Finnish wood pulp mills is 1,876,700 metric tons, of which 969,000 tons is sulphite, 278,000 tons sulphate and 629,700 tons is groundwood.



Watch Your Felts

Five years ago a few thousand dollars more or less for felts in a year's time made little difference. Today, with every mill struggling with conversion costs, even dimes count.

That is why it is so necessary that felt problems receive careful study—why the care of felts looms important—why the expenditure of more for felts than skillful operation requires, becomes almost a tragedy.

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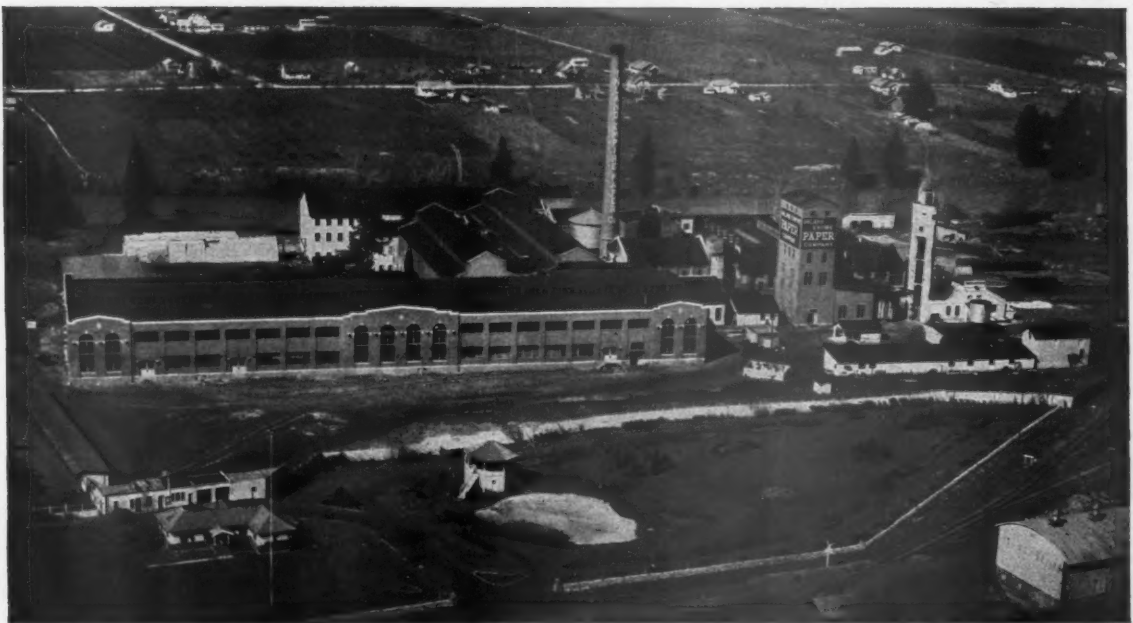
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